TABLES

FINAL OPERABLE UNIT 2B
REMEDIAL INVESTIGATION REPORT
SITES 3, 4, 11, AND 21

DATED 05 AUGUST 2005

TABLE 5-1 : SITE 3 SOIL AND SOIL GAS SAMPLING SUMMARY
Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Sample Location	Sample Identification	Date Sampled	Sample depth (feet bgs)	Analyses Performed													
				SVOCs	VOCs	Pesticides	PAHs	PCBs	Total Metals	o-Pest	General Chemistry	TPH	Title 26 Metals	O&G	Herb.	Organic Metal	Organic Lead
CERCLA INVESTIGATIONS																	
Phases 1 & 2A Investigation, 1991																	
MW97-1	MW97-1 [1.5-2.0]	7/26/1990	1.5 - 2	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-1 [2.5-3.0]	7/26/1990	2.5 - 3	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-1 [3.0-3.5]	7/26/1990	3 - 3.5	X	--	--	--	--	X	--	X	X	--	--	--	--	--
	MW97-1 [4.0-4.5]	7/26/1990	4 - 4.5	--	--	--	--	--	--	--	X	--	--	--	--	--	--
	MW97-1 [5.0-5.5]	7/26/1990	5 - 5.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-1 [7.0-7.5]	7/26/1990	7 - 7.5	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-1 [8.0-8.5]	7/26/1990	8 - 8.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-1 [10.5-11.0]	7/26/1990	10.5 - 11	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-1 [11.5-12.0]	7/26/1990	11.5 - 12	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-1 [14.0-14.5]	7/26/1990	14 - 14.5	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-1 [14.5-15.0]	7/26/1990	14.5 - 15	--	X	--	--	--	--	--	--	--	--	--	--	--	--
MW97-2	MW97-2 [1.0-1.5]	7/26/1990	1 - 1.5	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-2 [2.0-2.5]	7/26/1990	2 - 2.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-2 [3.5-4.0]	7/26/1990	3.5 - 4	X	--	--	--	--	X	--	X	X	--	--	--	--	--
	MW97-2 [4.0-4.5]	8/27/1990	4 - 4.5	--	--	--	--	--	--	--	X	--	--	--	--	--	--
	MW97-2 [5.0-5.5]	7/26/1990	5 - 5.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-2 [7.0-7.5]	7/26/1990	7 - 7.5	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-2 [8.0-8.5]	7/26/1990	8 - 8.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-2 [11.0-11.5]	7/26/1990	11 - 11.5	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-2 [11.5-12.0]	7/26/1990	11.5 - 12	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-2 [14.0-14.5]	7/26/1990	14 - 14.5	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-2 [14.5-15.0]	7/26/1990	14.5 - 15	--	X	--	--	--	--	--	--	--	--	--	--	--	--
MW97-3	MW97-3 [0.5-1.0]	7/26/1990	0.5 - 1	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-3 [2.0-2.5]	7/26/1990	2 - 2.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-3 [3.5-4.0]	7/26/1990	3.5 - 4	X	--	--	--	--	X	--	X	X	--	--	--	--	--
	MW97-3 [4.0-4.5]	7/26/1990	4 - 4.5	--	--	--	--	--	--	--	X	--	--	--	--	--	--
	MW97-3 [5.0-5.5]	7/26/1990	5 - 5.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-3 [7.0-7.5]	7/26/1990	7 - 7.5	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-3 [8.0-8.5]	7/26/1990	8 - 8.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-3 [10.5-11.0]	7/26/1990	10.5 - 11	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-3 [11.5-12.0]	7/26/1990	11.5 - 12	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	MW97-3 [14.0-14.5]	7/26/1990	14 - 14.5	X	--	--	--	--	X	--	--	X	--	--	--	--	--
	MW97-3 [14.5-15.0]	7/26/1990	14.5 - 15	--	X	--	--	--	--	--	--	--	--	--	--	--	--
Follow-on Investigation, 1994																	
03GB017	GPS03-017-1.0	8/16/1994	0.5 - 1	--	X	--	--	--	--	--	X	X	--	--	--	--	--
	GPS03-017-3.0	8/16/1994	2.5 - 3	--	X	--	--	--	--	--	X	X	--	--	--	--	--
	GPS03-017-5.5	8/16/1994	4.5 - 5.5	--	X	--	--	--	--	--	X	X	--	--	--	--	--
CPT-S03-01	280-S03-024	8/31/1994	0 - 1	--	X	--	--	--	X	--	X	X	--	--	--	--	--
	280-S03-025	8/31/1994	2.5 - 3.5	--	X	--	--	--	X	--	X	X	--	--	--	--	--
	280-S03-026	8/31/1994	5 - 6	--	X	--	--	--	X	--	X	X	--	--	--	--	--
M03-04	280-S03-027	11/6/1994	1 - 2	--	X	--	--	--	X	--	X	X	--	--	--	--	--
	280-S03-028	11/6/1994	2.5 - 3.5	--	X	--	--	--	X	--	X	X	--	--	--	--	--
	280-S03-030	11/6/1994	5 - 6	--	X	--	--	--	X	--	X	X	--	--	--	--	--
	280-S03-094	11/6/1994	10 - 11	--	X	--	--	--	X	--	X	X	--	--	--	--	--
M03-07	280-S03-106	11/20/1994	1 - 2	--	X	--	--	--	X	--	X	X	--	--	--	--	--
	280-S03-107	11/20/1994	2.5 - 3.5	--	X	--	--	--	X	--	X	X	--	--	--	--	--
	280-S03-108	11/20/1994	4.5 - 5.5	--	X	--	--	--	X	--	X	X	--	--	--	--	--
M03-08	280-S03-109	11/6/1994	1 - 2	--	X	--	--	--	X	--	X	X	--	--	--	--	--
	280-S03-110	11/6/1994	2.5 - 3.5	--	X	--	--	--	X	--	X	X	--	--	--	--	--
	280-S03-111	11/6/1994	5 - 6	--	X	--	--	--	X	--	X	X	--	--	--	--	--

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Sample Location	Sample Identification	Date Sampled	Sample depth (feet bgs)	Analyses Performed													
				SVOCs	VOCs	Pesticides	PAHs	PCBs	Total Metals	o-Pest	General Chemistry	TPH	Title 26 Metals	O&G	Herb.	Organic Metal	Organic Lead
Supplemental Data Gap Sampling, 2001																	
S03-DGS-DP01	385-S03-001	7/23/2001	5 - 5.5	--	X	--	--	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP02	385-S03-003	7/23/2001	5.5 - 6	--	X	--	--	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP03	385-S03-005	7/23/2001	5 - 5.5	--	X	--	--	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP06	385-S03-011	6/18/2001	0.5 - 1	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-012	6/18/2001	2.5 - 3	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-013	6/18/2001	4.5 - 5	--	--	--	--	--	X	--	X	--	--	--	--	--	X
S03-DGS-DP08	385-S03-019	6/18/2001	0.5 - 1	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-020	6/18/2001	2.5 - 3	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-021	6/18/2001	4.5 - 5	--	--	--	--	--	X	--	X	--	--	--	--	--	X
S03-DGS-DP09	385-S03-023	6/18/2001	0.5 - 1	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-024	6/18/2001	3.5 - 4	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-025	6/18/2001	5.5 - 6	--	--	--	--	--	X	--	X	--	--	--	--	--	X
S03-DGS-DP10	385-S03-027	6/18/2001	0.5 - 1	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-028	6/18/2001	3.5 - 4	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-029	6/18/2001	5.5 - 6	--	--	--	--	--	X	--	X	--	--	--	--	--	X
S03-DGS-DP11	385-S03-030	6/19/2001	1 - 1.5	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-031	6/19/2001	4 - 4.5	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-032	6/19/2001	6 - 6.5	--	--	--	--	--	X	--	X	--	--	--	--	--	X
S03-DGS-DP12	385-S03-033	6/19/2001	1 - 1.5	--	--	--	--	--	--	--	X	--	--	--	--	--	X
	385-S03-034	6/19/2001	4 - 4.5	--	--	--	--	--	X	--	X	--	--	--	--	--	X
S03-DGS-DP13	385-S03-037	6/19/2001	1 - 1.5	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-038	6/19/2001	4 - 4.5	--	--	--	--	--	X	--	X	--	--	--	--	--	X
	385-S03-039	6/19/2001	6 - 6.5	--	--	--	--	--	X	--	X	--	--	--	--	--	X
S03-DGS-DP14	385-S03-069	8/2/2001	1 - 1.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-070	8/2/2001	4 - 4.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-071	8/2/2001	6 - 6.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP15	385-S03-073	8/2/2001	1 - 1.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-074	8/2/2001	4 - 4.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-075	8/2/2001	6 - 6.4	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP16	385-S03-076	8/1/2001	1 - 1.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-077	8/1/2001	4 - 4.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-078	8/1/2001	6 - 6.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP17	385-S03-079	8/1/2001	1 - 1.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-080	8/1/2001	4 - 4.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-081	8/1/2001	6 - 6.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP18	385-S03-082	8/1/2001	4 - 4.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-083	8/1/2001	6 - 6.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP19	385-S03-084	8/2/2001	4 - 4.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-085	8/2/2001	6 - 6.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP31	385-S03-117	9/24/2001	5.5 - 6	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP32	385-S03-125	9/24/2001	3.5 - 4	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-126	9/24/2001	5.5 - 6	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP33	385-S03-112	9/24/2001	0.5 - 1	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-113	9/24/2001	3.5 - 4	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-114	9/24/2001	5.5 - 6	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP34	385-S03-119	9/24/2001	0.5 - 1	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-120	9/24/2001	3.5 - 4	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-121	9/24/2001	5.5 - 6	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP36	385-S03-128	11/6/2001	6 - 6.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP37	385-S03-130	11/6/2001	6 - 6.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
S03-DGS-DP38	385-S03-132	2/8/2002	6 - 6.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	385-S03-138	2/8/2002	5.5 - 6	--	--	--	--	--	--	--	X	X	--	--	--	--	--
S03-DGS-DP39	385-S03-134	2/8/2002	6 - 6.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--

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Sample Location	Sample Identification	Date Sampled	Sample depth (feet bgs)	Analyses Performed													
				SVOCs	VOCs	Pesticides	PAHs	PCBs	Total Metals	o-Pest	General Chemistry	TPH	Title 26 Metals	O&G	Herb.	Organic Metal	Organic Lead
Data Gap Sampling Soil Gas, 2001																	
S03-DGS-SG06	385-S03-056	8/3/2001	1.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	385-S03-058	8/3/2001	5.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	385-S03-057	8/3/2001	4	--	X	--	--	--	--	--	--	--	--	--	--	--	--
S03-DGS-SG14	385-S03-103	9/14/2001	1.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
S03-DGS-SG03	385-S03-052	8/2/2001	4	--	X	--	--	--	--	--	--	--	--	--	--	--	--
S03-DGS-DP28	385-S03-104	9/14/2001	5 - 7	--	X	--	--	--	--	--	--	--	--	--	--	--	--
S03-DGS-SG03	385-S03-053	8/2/2001	5.3	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	385-S03-051	8/2/2001	1.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
S03-DGS-SG12	385-S03-067	8/3/2001	0.5 - 3	--	X	--	--	--	--	--	--	--	--	--	--	--	--
S03-DGS-SG16	385-S03-107	9/14/2001	4	--	X	--	--	--	--	--	--	--	--	--	--	--	--
	385-S03-106	9/14/2001	1.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
S03-DGS-SG12	385-S03-066	8/3/2001	0.5 - 1.5	--	X	--	--	--	--	--	--	--	--	--	--	--	--
PAH Study, 2003																	
C3S003B001	C0591370	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591371	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591372	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591373	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B002	C0591374	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591375	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591376	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591377	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B003	C0591378	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591380	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591381	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591382	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B004	C0591383	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591384	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591385	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591386	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B005	C0591387	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591388	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591390	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591391	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B006	C0591392	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591393	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591394	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591395	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B007	C0591396	8/18/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591397	8/18/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591398	8/18/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591400	8/18/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B008	C0591401	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591402	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591403	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591404	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B009	C0591405	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591406	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591407	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591408	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B011	C0591414	8/18/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591415	8/18/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591416	8/18/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591417	8/18/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--

TABLE 5-1 : SITE 3 SOIL AND SOIL GAS SAMPLING SUMMARY
Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Sample Location	Sample Identification	Date Sampled	Sample depth (feet bgs)	Analyses Performed													
				SVOCs	VOCs	Pesticides	PAHs	PCBs	Total Metals	o-Pest	General Chemistry	TPH	Title 26 Metals	O&G	Herb.	Organic Metal	Organic Lead
C3S003B012	C0591418	8/18/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591420	8/18/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591421	8/18/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591422	8/18/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B013	C0591423	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591424	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591425	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591426	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B014	C0591427	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591428	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591430	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591431	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B015	C0591432	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591433	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591434	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591435	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B016	C0591436	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591437	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591438	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591440	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B017	C0591441	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591442	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591443	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591444	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B018	C0591445	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591446	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591447	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591448	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B020	C0591454	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591455	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591456	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591457	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B021	C0591458	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591460	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591461	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591462	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B022	C0591463	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591464	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591465	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591466	8/8/2003	4 - 8	--	X	--	X	--	--	--	--	X	--	--	--	--	--
	C0594000	8/12/2003	6.5 - 7.5	X	X	--	--	--	--	--	--	X	--	--	--	--	--
C3S003B023	C0591467	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591468	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591470	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591471	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B024	C0591472	8/7/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591473	8/7/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591474	8/7/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591475	8/7/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B025	C0591476	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591477	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591478	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591480	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B026	C0591481	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591482	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591483	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591484	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--

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Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

				Analyses Performed													
Sample Location	Sample Identification	Date Sampled	Sample depth (feet bgs)	SVOCs	VOCs	Pesticides	PAHs	PCBs	Total Metals	o-Pest	General Chemistry	TPH	Title 26 Metals	O&G	Herb.	Organic Metal	Organic Lead
C3S003B027	C0591485	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591486	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591487	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591488	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B029	C0591494	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591495	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591496	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591497	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B030	C0591498	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591500	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591501	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B031	C0591503	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591504	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591505	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591506	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B032	C0591507	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591508	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591510	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591511	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B033	C0591512	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591513	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591514	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591515	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B034	C0591516	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591517	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591518	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591520	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B035	C0591521	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591522	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591523	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591524	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B036	C0591525	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591526	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591527	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591528	8/8/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B038	C0591534	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591535	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591536	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591537	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B041	C0591547	8/18/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591548	8/18/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591550	8/18/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591551	8/18/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B042	C0591552	8/18/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591553	8/18/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591554	8/18/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591555	8/18/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B043	C0591556	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591557	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591558	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591560	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B044	C0591561	8/18/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591562	8/18/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591563	8/18/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591564	8/18/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B045	C0591565	8/8/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591566	8/8/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591567	8/8/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591568	8/8/2003	4 - 8	--	X	--	X	--	--	--	--	X	--	--	--	--	--
C3S003B047	C0591574	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591575	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591576	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591577	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--

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				Analyses Performed													
Sample Location	Sample Identification	Date Sampled	Sample depth (feet bgs)	SVOCs	VOCs	Pesticides	PAHs	PCBs	Total Metals	o-Pest	General Chemistry	TPH	Title 26 Metals	O&G	Herb.	Organic Metal	Organic Lead
C3S003B049	C0591583	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591584	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591585	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591586	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B050	C0591587	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591588	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591590	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591591	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B051	C0591592	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591593	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591594	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591595	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B052	C0591596	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591597	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591598	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591600	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B053	C0591601	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591602	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591603	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591604	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B054	C0591605	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591606	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591607	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591608	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B055	C0591610	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591611	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591612	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591613	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B056	C0591614	8/20/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591615	8/20/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591616	8/20/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591617	8/20/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B057	C0591618	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591620	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591621	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591622	8/19/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B058	C0591623	8/20/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591624	8/20/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591625	8/20/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591626	8/20/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B059	C0591627	8/22/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591628	8/22/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591630	8/22/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591631	8/22/2003	4 - 8	--	--	--	X	--	--	--	--	--	--	--	--	--	--
C3S003B061	C0591636	8/19/2003	0 - 0.5	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591637	8/19/2003	0.5 - 2	--	--	--	X	--	--	--	--	--	--	--	--	--	--
	C0591638	8/19/2003	2 - 4	--	--	--	X	--	--	--	--	--	--	--	--	--	--

TABLE 5-1 : SITE 3 SOIL AND SOIL GAS SAMPLING SUMMARY

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Sample Location	Sample Identification	Date Sampled	Sample depth (feet bgs)	Analyses Performed													
				SVOCs	VOCs	Pesticides	PAHs	PCBs	Total Metals	o-Pest	General Chemistry	TPH	Title 26 Metals	O&G	Herb.	Organic Metal	Organic Lead
ENVIRONMENTAL BASELINE SURVEY																	
Environmental Baseline Survey, Phase 2A																	
115-Z21-003	115-0003M	6/19/1995	0.5 - 1	X	--	--	--	--	--	--	--	X	X	--	--	--	--
	115-0006	6/19/1995	5 - 6	X	X	--	--	--	X	--	X	X	--	--	--	--	--
	115-0006M	6/19/1995	5 - 6	X	X	--	--	--	--	--	--	X	X	--	--	--	--
116-Z21-001	116-0001M	6/26/1995	0.5 - 1	X	--	--	--	--	--	--	--	X	X	--	--	--	--
	116-0004M	6/26/1995	4 - 4.5	X	X	--	--	--	--	--	--	X	X	--	--	--	--
116-Z21-002	116-0002	6/26/1995	0.5 - 1	--	--	X	--	--	--	--	X	--	--	--	--	--	--
	116-0002M	6/26/1995	0.5 - 1	--	--	X	--	--	--	--	--	--	--	--	--	--	--
116-Z21-003	116-0003M	6/26/1995	0.5 - 1	X	--	X	--	--	--	--	--	X	X	--	--	--	--
118-Z21-001	118-0006M	6/23/1995	4 - 4.5	X	X	--	--	--	--	--	--	X	X	--	--	--	--
118-Z21-002	118-0002	6/23/1995	0.5 - 1	X	--	--	--	--	X	--	X	X	--	--	--	--	--
	118-0002M	6/23/1995	0.5 - 1	X	--	--	--	--	--	--	--	X	X	--	--	--	--
	118-0007M	6/23/1995	4 - 4.5	X	X	--	--	--	--	--	--	X	X	--	--	--	--
118-Z21-003	118-0003M	6/23/1995	0.5 - 1	--	--	X	--	--	--	--	--	--	--	--	--	--	--
118-Z21-004	118-0004M	6/23/1995	0.5 - 1	--	--	X	--	--	--	--	--	--	--	--	--	--	--
118-Z21-005	118-0005M	6/26/1995	0.5 - 1	--	--	X	--	--	--	--	--	--	--	--	--	--	--
120-Z21-001	120-0001	6/28/1995	0 - 0.5	--	--	X	--	--	--	--	X	--	--	--	--	--	--
	120-0001M	6/28/1995	0 - 0.5	--	--	X	--	--	--	--	--	--	--	--	--	--	--
120-Z21-002	120-0002	6/28/1995	0 - 0.5	--	--	X	--	--	--	--	X	--	--	--	X	--	--
121-Z21-001	121-0001	6/28/1995	0 - 0.5	--	--	X	--	--	--	--	X	--	--	--	X	--	--
	121-0001M	6/28/1995	0 - 0.5	--	--	X	--	--	--	--	--	--	--	--	--	--	--
122-001-001	122-0001	6/8/1995	0.5 - 1	X	--	--	--	--	X	--	X	X	--	--	--	--	--
	122-0001M	6/8/1995	0.5 - 1	X	--	--	--	--	--	--	--	X	X	--	--	--	--
122-001-002	122-0002M	6/8/1995	1 - 1.5	X	--	--	--	--	--	--	--	X	X	--	--	--	--
122-002-004	122-0004	6/5/1995	1 - 1.5	--	--	--	--	--	X	--	X	--	--	--	--	--	--
	122-0004M	6/5/1995	1 - 1.5	--	--	--	--	--	--	--	--	--	X	--	--	--	--
128-001-001	128-0001M	6/6/1995	1 - 1.5	--	--	--	--	--	--	--	--	X	--	--	--	--	--
	128-0006M	6/6/1995	4 - 4.5	--	--	--	--	--	--	--	--	X	--	--	--	--	--
128-001-002	128-0002M	6/5/1995	0.8 - 1.3	--	--	--	--	--	--	--	--	X	--	--	--	--	--
	128-0007M	6/5/1995	4 - 4.5	--	--	--	--	--	--	--	--	X	--	--	--	--	--
128-001-003	128-0003M	6/6/1995	0.5 - 1	--	--	--	--	--	--	--	--	X	--	--	--	--	--
	128-0008M	6/6/1995	2.5 - 3	--	--	--	--	--	--	--	--	X	--	--	--	--	--
128-001-004	128-0004M	6/6/1995	0.5 - 1	--	--	--	--	--	--	--	--	X	--	--	--	--	--
	128-0009M	6/6/1995	4 - 4.5	--	--	--	--	--	--	--	--	X	--	--	--	--	--
128-001-005	128-0005	6/6/1995	0.5 - 1	--	--	--	--	--	--	--	X	X	--	--	--	--	--
	128-0005M	6/6/1995	0.5 - 1	--	--	--	--	--	--	--	--	X	--	--	--	--	--
	128-0010	6/6/1995	4 - 4.5	--	--	--	--	--	--	--	X	X	--	--	--	--	--
	128-0010M	6/6/1995	4 - 4.5	--	--	--	--	--	--	--	--	X	--	--	--	--	--
128-SN-001	128S-001	1/24/1995	8 - 9.5	X	--	X	--	--	--	--	X	--	--	--	--	--	X
	128S-001M	1/24/1995	8 - 9.5	--	X	--	--	--	X	--	--	X	--	--	--	--	--
129-001-001	129-0001	6/30/1995	0.5 - 1	X	--	--	--	--	X	--	X	X	--	--	--	--	--
	129-0001M	6/30/1995	0.5 - 1	X	--	--	--	--	--	--	--	X	X	--	--	--	--
	129-0007	6/30/1995	4 - 5	X	X	--	--	--	X	--	X	X	--	--	--	--	--
	129-0007M	6/30/1995	4 - 5	X	X	--	--	--	--	--	--	X	X	--	--	--	--
129-001-002	129-0002M	6/30/1995	0.5 - 1	X	--	--	--	--	--	--	--	X	X	--	--	--	--
	129-0008M	6/30/1995	4 - 4.5	X	X	--	--	--	--	--	--	X	X	--	--	--	--
129-001-003	129-0003M	6/30/1995	0.5 - 1.5	X	--	--	--	--	--	--	--	X	X	--	--	--	--
	129-0009M	6/30/1995	4 - 5	X	X	--	--	--	--	--	--	X	X	--	--	--	--
129-002-004	129-0004	6/30/1995	1 - 1.5	X	--	--	--	--	X	--	X	X	--	--	--	--	--
	129-0004M	6/30/1995	1 - 1.5	X	--	--	--	--	--	--	--	X	X	--	--	--	--
	129-0010	6/30/1995	4 - 5	X	X	--	--	--	X	--	X	X	--	--	--	--	--
	129-0010M	6/30/1995	4 - 5	X	X	--	--	--	--	--	--	X	X	--	--	--	--
129-002-005	129-0005M	7/10/1995	0.5 - 1	X	--	--	--	--	--	--	--	X	X	--	--	--	--
	129-0011M	7/10/1995	4 - 5	X	X	--	--	--	--	--	--	X	X	--	--	--	--
129-002-006	129-0006M	6/30/1995	1 - 1.5	X	--	--	--	--	--	--	--	X	X	--	--	--	--
	129-0012M	6/30/1995	4 - 5	X	X	--	--	--	--	--	--	X	X	--	--	--	--
134-IW-001	134I-001	2/17/1995	4 - 4.5	X	X	X	--	--	X	X	X	X	--	X	X	X	X
	134I-001M	2/17/1995	4 - 4.5	--	X	--	--	--	X	--	--	--	--	--	--	--	--
197-Z21-006	197-0006	6/30/1995	2 - 3	X	--	X	--	--	X	--	X	X	--	--	--	--	--
	197-0006M	6/30/1995	2 - 3	X	--	--	--	X	X	--	--	X	--	--	--	--	--

TABLE 5-1 : SITE 3 SOIL AND SOIL GAS SAMPLING SUMMARY

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Sample Location	Sample Identification	Date Sampled	Sample depth (feet bgs)	Analyses Performed													
				SVOCs	VOCs	Pesticides	PAHs	PCBs	Total Metals	o-Pest	General Chemistry	TPH	Title 26 Metals	O&G	Herb.	Organic Metal	Organic Lead
Environmental Baseline Survey, Storm Sewer Investigation																	
127-SS-001	127M-001	2/14/1995	7 - 8	X	--	X	--	--	--	--	X	--	--	X	--	X	--
	127M-001M	2/14/1995	7 - 8	--	X	--	--	--	X	--	--	X	--	--	--	--	--
127-SS-003	127M-003	6/2/1995	3 - 3.5	X	--	X	--	--	--	--	X	--	--	X	--	X	--
	127M-003M	6/2/1995	3 - 3.5	--	X	--	--	--	--	--	--	X	X	--	--	--	--
127-SS-004	127M-004	2/14/1995	3 - 4	X	--	X	--	--	--	--	X	--	--	X	--	X	--
	127M-004M	2/14/1995	3 - 4	--	X	--	--	--	X	--	--	X	--	--	--	--	--
131-SS-001	131M-001	2/14/1995	3 - 4	X	--	X	--	--	--	--	X	--	--	X	--	X	X
	131M-001M	2/14/1995	3 - 4	--	X	--	--	--	X	--	--	X	--	--	--	--	--
131-SS-002	131M-002	2/21/1995	10 - 11	X	--	X	--	--	--	--	X	--	--	X	--	X	X
	131M-002M	2/21/1995	10 - 11	--	X	--	--	--	X	--	--	X	--	--	--	--	--
Environmental Baseline Survey, Phase 2B																	
116-Z21-004	116-0005	11/8/1995	1 - 2	X	--	X	--	--	X	--	X	--	--	--	--	--	--
	116-0006	11/8/1995	3 - 4	X	--	X	--	--	X	--	X	--	--	--	--	--	--
116-Z21-005	116-0007	11/8/1995	4 - 5	X	--	X	--	--	X	--	X	--	--	--	--	--	--
	116-0008	11/8/1995	4 - 5	X	--	X	--	--	X	--	X	--	--	--	--	--	--
116-Z21-006	116-0010	11/8/1995	2.5 - 3.5	X	--	X	--	--	X	--	X	--	--	--	--	--	--
	116-0011	11/8/1995	3.5 - 4.5	X	--	X	--	--	X	--	X	--	--	--	--	--	--
118-Z21-007	118-0009	11/8/1995	1 - 2	X	--	X	--	--	X	--	X	--	--	--	--	--	--
	118-0010	11/8/1995	3.5 - 4.5	X	--	X	--	--	X	--	X	--	--	--	--	--	--
118-Z21-008	118-0012	11/8/1995	1 - 2	X	--	X	--	--	X	--	X	--	--	--	--	--	--
	118-0013	11/8/1995	2 - 3	X	--	X	--	--	X	--	X	--	--	--	--	--	--
129-003-007	129-0017	11/10/1995	3.5 - 4	--	--	--	--	--	X	--	X	--	--	--	--	--	--
129-003-008	129-0019	11/10/1995	3.5 - 4	--	--	--	--	--	X	--	X	--	--	--	--	--	--
TPH INVESTIGATIONS																	
Fuel Line and Underground Storage Tank Investigation																	
030-FLI-078	030-FLI-078	10/28/1998	4.5	--	X	--	--	--	--	--	X	X	--	--	--	--	--
030-FLI-079	030-FLI-079	10/29/1998	5.5	--	X	--	--	--	--	--	X	X	--	--	--	--	--
030-FLI-080	030-FLI-080	10/30/1998	6	--	X	--	--	--	--	--	X	X	--	--	--	--	--
030-FLI-087	030-FLI-087	11/2/1998	6.5	--	X	--	--	--	--	--	X	X	--	--	--	--	--
030-S07-068	030-S07-068	10/24/1998	9.5	X	X	--	--	--	X	--	X	X	--	--	--	--	--
030-S07-069	030-S07-069	10/27/1998	5	X	X	--	--	--	X	--	X	X	--	--	--	--	--
030-S07-071	030-S07-071	11/2/1998	5.5	X	X	--	--	--	X	--	X	X	--	--	--	--	--
097-001	030-USTF-021	9/1/1999	9 - 10	--	X	--	--	--	X	--	X	X	--	--	--	--	--
097-002	030-USTF-022	9/1/1999	9 - 10	--	X	--	--	--	X	--	X	X	--	--	--	--	--
097-003	030-USTF-023	9/1/1999	8 - 9	--	X	--	--	--	X	--	X	X	--	--	--	--	--
097-004	030-USTF-018	9/1/1999	9 - 10	--	X	--	--	--	X	--	X	X	--	--	--	--	--
097-006	030-USTF-020	9/1/1999	8 - 9	--	X	--	--	--	X	--	X	X	--	--	--	--	--
097-007	030-USTF-024	9/1/1999	9 - 10	--	X	--	--	--	X	--	X	X	--	--	--	--	--
097-008	030-USTF-025	9/1/1999	9 - 10	--	X	--	--	--	X	--	X	X	--	--	--	--	--
097-009	030-USTF-026	9/1/1999	9 - 10	--	X	--	--	--	X	--	X	X	--	--	--	--	--
097-011	030-USTF-019	9/1/1999	6 - 7	--	X	--	--	--	X	--	X	X	--	--	--	--	--
398-11-ERM	398-S11	1/11/1995	5	--	X	--	--	--	--	--	--	X	--	--	--	--	--
398-14-ERM	398-S14	1/11/1995	5	--	X	--	--	--	--	--	--	X	--	--	--	--	--
398-1-MOJ	398-P1	9/4/1997	6	--	X	--	--	--	--	--	--	X	--	--	--	--	--
398-2-MOJ	398-P2	9/5/1997	6	--	X	--	--	--	--	--	--	X	--	--	--	--	--
398-MW3	398-MW3	1/25/1995	4	--	X	--	--	--	--	--	--	X	--	--	--	--	--
398-MW4	398-MW4	1/25/1995	4	--	X	--	--	--	--	--	--	X	--	--	--	--	--

Notes:

--	Not analyzed
bgs	Below ground surface
ft	Foot
General chemistry	Any combination of the following: percent moisture, pH, reactivity and/or TOC.
o-Pest	Organic pesticide
O & G	Oil and Grease
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated hydrocarbon
SVOC	Semivolatile organic compound
TPH	Total petroleum hydrocarbon
VOC	Volatile organic compound
CMPL	Complete

TABLE 5-2 : SITE 3 GROUNDWATER SAMPLING SUMMARY

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Sample Location	Sample Identification	Date Sampled	Sample Depth (ft bgs)	Analyses Performed									
				SVOCs	VOCs	Pesticides	Total Metals	Dissolved Metals	PAHs	General Chemistry	TPH	Dissolved Gases	Organic Lead
CERCLA INVESTIGATIONS													
Phases 1 & 2A Investigation, 1991													
MW97-1	MW97-1 [08/30/90]	8/30/1990	5 - 15	X	X	--	--	X	--	X	X	--	--
MW97-2	MW97-2 [08/31/90]	8/31/1990	5 - 15	X	X	--	--	X	--	X	X	--	--
MW97-3	MW97-3 [08/31/90]	10/18/1990	5 - 15	X	X	--	--	X	--	X	--	--	--
Follow-on Investigation, 1994													
03GB002	GPW03-002	8/11/1994	5 - 6	--	X	--	--	--	--	--	X	--	--
03GB017	GPW03-170	8/16/1994	5 - 6	--	X	--	--	--	--	--	X	--	--
D03-01	280-S03-098	12/14/1994	49.5 - 59.5	X	X	--	--	X	--	X	X	--	--
	280-S03-121	2/16/1995	49.5 - 59.5	--	X	--	--	X	--	X	X	--	--
	280-S03-122	6/8/1995	49.5 - 59.5	--	X	--	--	X	--	X	--	--	--
	280-S03-123	8/4/1995	49.5 - 59.5	--	X	--	--	X	--	X	--	--	--
DHP-S03-01	280-S03-073	9/6/1994	31.3 - 31.4	--	X	--	--	X	--	X	--	--	--
DHP-S03-02	280-S03-074	8/5/1994	34	--	X	--	--	X	--	X	--	--	--
DHP-S03-04	280-S03-076	8/5/1994	22	X	X	--	--	X	--	X	--	--	--
DHP-S03-05	280-S03-077	8/31/1994	19 - 22	--	X	--	--	X	--	X	--	--	--
M03-04	280-S03-059	12/15/1994	3 - 11	X	X	--	--	X	--	X	X	--	--
	280-S03-060	2/7/1995	3 - 11	X	X	--	--	X	--	X	X	--	--
	280-S03-061	6/9/1995	3 - 11	X	X	--	--	X	--	X	X	--	--
	280-S03-062	8/4/1995	3 - 11	X	X	--	--	X	--	X	X	--	--
M03-07	280-S03-095	12/14/1994	3 - 13	X	X	--	--	X	--	X	X	--	--
	280-S03-112	2/8/1995	3 - 13	X	X	--	--	X	--	X	X	--	--
	280-S03-113	6/6/1995	3 - 13	X	X	--	--	X	--	X	X	--	--
	280-S03-114	8/2/1995	3 - 13	X	X	--	--	X	--	X	X	--	--
M03-08A	280-S03-097	12/9/1994	3 - 13	X	X	X	--	X	--	X	X	--	--
	280-S03-118	2/9/1995	3 - 13	X	X	--	--	X	--	X	X	--	--
	280-S03-119	6/6/1995	3 - 13	X	X	--	--	X	--	X	X	--	--
	280-S03-120	8/4/1995	3 - 13	X	X	--	--	X	--	X	X	--	--
MW97-1	280-S03-045	10/14/1994	5 - 15	X	X	--	--	X	--	X	X	--	--
	280-S03-047	2/7/1995	5 - 15	X	X	--	--	X	--	X	X	--	--
	280-S03-048	6/8/1995	5 - 15	X	X	--	--	X	--	X	X	--	--
	280-S03-049	7/31/1995	5 - 15	X	X	--	--	X	--	X	X	--	--
MW97-2	280-S03-050	10/18/1994	5 - 15	X	X	--	--	X	--	X	X	--	--
	280-S03-051	2/8/1995	5 - 15	X	X	--	--	X	--	X	X	--	--
	280-S03-052	6/6/1995	5 - 15	X	X	--	--	X	--	X	X	--	--
	280-S03-053	8/1/1995	5 - 15	X	X	--	--	X	--	X	X	--	--
MW97-3	280-S03-054	10/14/1994	5 - 15	X	X	--	--	X	--	X	X	--	--
	280-S03-055	2/7/1995	5 - 15	X	X	--	--	X	--	X	X	--	--
	280-S03-056	6/9/1995	5 - 15	X	X	--	--	X	--	X	X	--	--
	280-S03-058	8/2/1995	5 - 15	X	X	--	--	X	--	X	X	--	--
Follow-on Investigation, 1998													
M03-04	108-S03-001	11/3/1997	3 - 11	--	X	--	--	X	--	X	X	--	--
	108-S03-004	2/10/1998	3 - 11	--	X	--	--	X	--	X	X	--	--
	108-S03-007	5/11/1998	3 - 11	--	X	--	--	X	--	X	X	--	--
	108-S03-010	8/4/1998	3 - 11	--	X	--	--	X	--	X	X	--	--
M03-07	108-S03-003	11/3/1997	3 - 13	--	X	--	--	X	--	X	X	--	--
	108-S03-006	2/6/1998	3 - 13	--	X	--	--	X	--	X	X	--	--
	108-S03-009	5/11/1998	3 - 13	--	X	--	--	X	--	X	X	--	--
	108-S03-012	8/4/1998	3 - 13	--	X	--	X	--	--	X	X	--	--

TABLE 5-2 : SITE 3 GROUNDWATER SAMPLING SUMMARY

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Sample Location	Sample Identification	Date Sampled	Sample Depth (ft bgs)	Analyses Performed									
				SVOCs	VOCs	Pesticides	Total Metals	Dissolved Metals	PAHs	General Chemistry	TPH	Dissolved Gases	Organic Lead
S04-4-1	122-S04-098	1/30/1998	7.5 - 9.5	--	X	--	--	--	--	--	--	--	--
	122-S04-099	1/30/1998	13.5 - 15.5	--	X	--	--	--	--	--	--	--	--
	122-S04-100	1/30/1998	30 - 35	--	X	--	--	--	--	--	--	--	--
S04-4-2	122-S04-104	2/2/1998	30 - 35	--	X	--	--	--	--	--	--	--	--
	122-S04-213	3/11/1998	11.5 - 13.5	--	X	--	--	--	--	--	--	--	--
	122-S04-214	3/12/1998	20 - 25	--	X	--	--	--	--	--	--	--	--
	122-S04-214	3/12/1998	20 - 25	--	X	--	--	--	--	--	--	--	--
S04-4-3	122-S04-035	1/26/1998	9.5 - 11.5	--	X	--	--	--	--	--	--	--	--
	122-S04-036	1/26/1998	11.5 - 13.5	--	X	--	--	--	--	--	--	--	--
	122-S04-039	1/26/1998	30 - 35	--	X	--	--	--	--	--	--	--	--
	122-S04-059	1/26/1998	5.5 - 7.5	--	X	--	--	--	--	--	--	--	--
	122-S04-129	2/11/1998	20 - 25	--	X	--	--	--	--	--	--	--	--
S04-5-3	122-S04-041	1/27/1998	15.5 - 20	--	X	--	--	--	--	--	--	--	--
	122-S04-041	1/27/1998	15.5 - 20	--	X	--	--	--	--	--	--	--	--
	122-S04-062	1/27/1998	9.5 - 11.5	--	X	--	--	--	--	--	--	--	--
	122-S04-063	1/27/1998	11.5 - 13.5	--	X	--	--	--	--	--	--	--	--
	122-S04-065	1/28/1998	20 - 25	--	X	--	--	--	--	--	--	--	--
	122-S04-066	1/28/1998	25 - 30	--	X	--	--	--	--	--	--	--	--
	122-S04-067	1/28/1998	30 - 35	--	X	--	--	--	--	--	--	--	--
	122-S04-068	1/28/1998	40 - 45	--	X	--	--	--	--	--	--	--	--
S04-5-4	122-S04-117	2/5/1998	25 - 30	--	X	--	--	--	--	--	--	--	--
	122-S04-118	2/5/1998	30 - 35	--	X	--	--	--	--	--	--	--	--
	122-S04-119	2/5/1998	20 - 25	--	X	--	--	--	--	--	--	--	--
Supplemental Data Gap Sampling, 2001													
398-MW3	385-S21-026	6/26/2001	3.76 - 13.76	X	X	--	--	--	X	--	X	--	--
398-MW4	385-S21-027	6/27/2001	2.85 - 12.85	X	X	--	--	--	X	--	X	--	--
D03-01	385-S03-048	6/29/2001	49.5 - 59.5	X	X	--	--	--	X	--	X	--	--
M03-04	385-S03-043	6/27/2001	3 - 11	X	X	--	--	--	X	--	X	--	--
M03-07	385-S03-046	6/29/2001	3 - 13	X	X	--	--	--	X	--	X	--	--
M03-08A	385-S03-047	6/28/2001	3 - 13	X	X	--	--	--	X	--	X	--	--
MW97-1	385-S03-040	6/28/2001	5 - 15	X	X	--	--	--	X	--	X	--	--
MW97-2	385-S03-041	6/28/2001	5 - 15	X	X	--	--	--	X	--	X	--	--
MW97-3	385-S03-042	6/28/2001	5 - 15	X	X	--	--	--	X	--	X	--	--
S03-DGS-DP01	385-S03-002	7/23/2001	7	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP02	385-S03-004	7/23/2001	7	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP03	385-S03-006	7/23/2001	5	--	X	--	--	--	--	--	X	--	--
	385-S03-088	8/9/2001	10	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP09	385-S03-026	6/18/2001	4.5 - 5	--	--	--	--	X	--	--	--	--	X
S03-DGS-DP12	385-S03-036	6/19/2001	6 - 6.5	--	--	--	--	X	--	--	--	--	X
S03-DGS-DP14	385-S03-072	8/2/2001	3.5 - 5	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP16	385-S03-143	5/10/2002	6 - 8	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP17	385-S03-139	4/23/2002	6	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP18	385-S03-140	4/23/2002	6	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP19	385-S03-086	8/2/2001	4.5 - 6.5	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP20	385-S03-087	8/9/2001	5	--	X	--	--	--	--	--	X	--	--
	385-S03-089	8/17/2001	10 - 12	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP21	385-S03-090	8/17/2001	5 - 7	--	X	--	--	--	--	--	X	--	--
	385-S03-091	8/17/2001	10 - 12	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP22	385-S03-092	8/17/2001	5 - 7	--	X	--	--	--	--	--	X	--	--
	385-S03-093	8/17/2001	10 - 12	--	X	--	--	--	--	--	X	--	--

TABLE 5-2 : SITE 3 GROUNDWATER SAMPLING SUMMARY

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Sample Location	Sample Identification	Date Sampled	Sample Depth (ft bgs)	Analyses Performed									
				SVOCs	VOCs	Pesticides	Total Metals	Dissolved Metals	PAHs	General Chemistry	TPH	Dissolved Gases	Organic Lead
S03-DGS-DP23	385-S03-094	8/20/2001	5 - 7	--	X	--	--	--	--	--	X	--	--
	385-S03-095	8/20/2001	10 - 12	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP24	385-S03-096	8/23/2001	5 - 7	--	X	--	--	--	--	--	X	--	--
	385-S03-097	8/23/2001	12 - 14	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP25	385-S03-098	8/23/2001	5 - 7	--	X	--	--	--	--	--	X	--	--
	385-S03-099	8/23/2001	12 - 14	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP26	385-S03-100	8/28/2001	8	--	X	--	--	--	--	--	X	--	--
	385-S03-101	8/28/2001	14	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP28	385-S03-109	9/10/2001	5	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP29	385-S03-110	9/10/2001	5 - 7	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP30	385-S03-111	9/10/2001	5 - 7	--	X	--	--	--	--	--	X	--	--
S03-DGS-DP31	385-S03-118	9/24/2001	6.5 - 7	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP32	385-S03-127	9/24/2001	7.5 - 8	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP33	385-S03-115	9/24/2001	6.5 - 7	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP34	385-S03-122	9/24/2001	6.5 - 7	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP36	385-S03-129	11/6/2001	6.5	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP37	385-S03-131	11/6/2001	6.5	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP38	385-S03-133	2/8/2002	6	--	--	--	--	X	--	--	X	--	--
S03-DGS-DP39	385-S03-135	2/8/2002	6	--	--	--	--	X	--	--	--	--	--
S03-DGS-DP41	385-S03-141	4/23/2002	6	--	--	--	--	X	--	--	--	--	--
S04-DGS-DP50	385-S04-283	10/16/2001	20 - 22	--	X	--	--	--	--	--	--	--	--
	385-S04-284	10/16/2001	35 - 37	--	X	--	--	--	--	--	--	--	--
	385-S04-285	10/16/2001	48 - 50	--	X	--	--	--	--	--	--	--	--
Pilot Study, 2002													
4-1-ADD1	4-1-ADD1-10	10/29/2001	6 - 10	--	X	--	--	--	--	--	--	--	--
	4-1-ADD1-15	10/29/2001	12 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD1-19	10/29/2001	16 - 19	--	X	--	--	--	--	--	--	--	--
	4-1-ADD1-25	10/29/2001	21 - 25	--	X	--	--	--	--	--	--	--	--
	4-1-ADD1-30	10/29/2001	27 - 30	--	X	--	--	--	--	--	--	--	--
	4-1-ADD1-34	10/29/2001	31 - 34	--	X	--	--	--	--	--	--	--	--
4-1-ADD2	4-1-ADD2-10	10/22/2001	6 - 10	--	X	--	--	--	--	--	--	--	--
	4-1-ADD2-14	10/22/2001	11 - 14	--	X	--	--	--	--	--	--	--	--
	4-1-ADD2-19	10/22/2001	16 - 19	--	X	--	--	--	--	--	--	--	--
	4-1-ADD2-25	10/22/2001	21 - 25	--	X	--	--	--	--	--	--	--	--
	4-1-ADD2-30	10/22/2001	27 - 30	--	X	--	--	--	--	--	--	--	--
	4-1-ADD2-34	10/22/2001	31 - 34	--	X	--	--	--	--	--	--	--	--
	4-1-ADD2-39	10/22/2001	36 - 39	--	X	--	--	--	--	--	--	--	--
	4-1-ADD2-45	10/22/2001	41 - 45	--	X	--	--	--	--	--	--	--	--
4-1-ADD3	4-1-ADD3-10	10/29/2001	6 - 10	--	X	--	--	--	--	--	--	--	--
	4-1-ADD3-15	10/29/2001	12 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD3-19	10/29/2001	16 - 19	--	X	--	--	--	--	--	--	--	--
	4-1-ADD3-25	10/29/2001	21 - 25	--	X	--	--	--	--	--	--	--	--
	4-1-ADD3-30	10/29/2001	27 - 30	--	X	--	--	--	--	--	--	--	--
	4-1-ADD3-34	10/29/2001	31 - 34	--	X	--	--	--	--	--	--	--	--
	4-1-ADD3-45	10/29/2001	41 - 45	--	X	--	--	--	--	--	--	--	--
4-1-ADD4	4-1-ADD4-10	11/13/2001	6 - 10	--	X	--	--	--	--	--	--	--	--
	4-1-ADD4-15	11/13/2001	12 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD4-19	11/13/2001	16 - 19	--	X	--	--	--	--	--	--	--	--
	4-1-ADD4-25	11/13/2001	21 - 25	--	X	--	--	--	--	--	--	--	--
	4-1-ADD4-30	11/13/2001	27 - 30	--	X	--	--	--	--	--	--	--	--
	4-1-ADD4-34	12/7/2001	31 - 34	--	X	--	--	--	--	--	--	--	--
	4-1-ADD4-40	12/7/2001	36 - 40	--	X	--	--	--	--	--	--	--	--

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Sample Location	Sample Identification	Date Sampled	Sample Depth (ft bgs)	Analyses Performed									
				SVOCs	VOCs	Pesticides	Total Metals	Dissolved Metals	PAHs	General Chemistry	TPH	Dissolved Gases	Organic Lead
4-1-ADD5	4-1-ADD5-10	10/23/2001	6 - 10	--	X	--	--	--	--	--	--	--	--
	4-1-ADD5-15	10/23/2001	12 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD5-20	10/23/2001	17 - 20	--	X	--	--	--	--	--	--	--	--
	4-1-ADD5-25	10/23/2001	22 - 25	--	X	--	--	--	--	--	--	--	--
	4-1-ADD5-30	10/23/2001	27 - 30	--	X	--	--	--	--	--	--	--	--
	4-1-ADD5-35	10/23/2001	31 - 35	--	X	--	--	--	--	--	--	--	--
	4-1-ADD5-40	10/23/2001	36 - 40	--	X	--	--	--	--	--	--	--	--
	4-1-ADD5-45	10/23/2001	41 - 45	--	X	--	--	--	--	--	--	--	--
4-1-ADD6	4-1-ADD6-10	11/15/2001	6 - 10	--	X	--	--	--	--	--	--	--	--
	4-1-ADD6-15	11/15/2001	12 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD6-20	11/15/2001	17 - 20	--	X	--	--	--	--	--	--	--	--
	4-1-ADD6-25	11/15/2001	22 - 25	--	X	--	--	--	--	--	--	--	--
	4-1-ADD6-30	11/15/2001	27 - 30	--	X	--	--	--	--	--	--	--	--
	4-1-ADD6-35	11/15/2001	31 - 35	--	X	--	--	--	--	--	--	--	--
	4-1-ADD6-40	11/15/2001	36 - 40	--	X	--	--	--	--	--	--	--	--
4-1-ADD7	4-1-ADD7-10	10/22/2001	6 - 10	--	X	--	--	--	--	--	--	--	--
	4-1-ADD7-15	10/22/2001	11 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD7-19	10/22/2001	16 - 19	--	X	--	--	--	--	--	--	--	--
	4-1-ADD7-24	10/22/2001	21 - 24	--	X	--	--	--	--	--	--	--	--
	4-1-ADD7-29	10/22/2001	26 - 29	--	X	--	--	--	--	--	--	--	--
	4-1-ADD7-39	10/22/2001	36 - 39	--	X	--	--	--	--	--	--	--	--
4-1-ADD37	4-1-ADD37-09	12/7/2001	6 - 9	--	X	--	--	--	--	--	--	--	--
	4-1-ADD37-15	12/7/2001	11 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD37-20	12/7/2001	17 - 20	--	X	--	--	--	--	--	--	--	--
	4-1-ADD37-25	12/7/2001	22 - 25	--	X	--	--	--	--	--	--	--	--
	4-1-ADD37-31	12/7/2001	27 - 31	--	X	--	--	--	--	--	--	--	--
4-1-ADD53	4-1-ADD53-10	12/5/2001	6 - 10	--	X	--	--	--	--	--	--	--	--
	4-1-ADD53-15	12/5/2001	12 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD53-19	12/5/2001	16 - 19	--	X	--	--	--	--	--	--	--	--
	4-1-ADD53-24	12/5/2001	21 - 24	--	X	--	--	--	--	--	--	--	--
	4-1-ADD53-30	12/5/2001	27 - 30	--	X	--	--	--	--	--	--	--	--
	4-1-ADD53-35	12/5/2001	31 - 35	--	X	--	--	--	--	--	--	--	--
	4-1-ADD53-40	12/5/2001	37 - 40	--	X	--	--	--	--	--	--	--	--
4-1-ADD54	4-1-ADD54-09	12/6/2001	6 - 9	--	X	--	--	--	--	--	--	--	--
	4-1-ADD54-15	12/6/2001	12 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD54-19	12/6/2001	16 - 19	--	X	--	--	--	--	--	--	--	--
	4-1-ADD54-25	12/6/2001	21 - 25	--	X	--	--	--	--	--	--	--	--
4-1-ADD55	4-1-ADD55-10	12/6/2001	6 - 10	--	X	--	--	--	--	--	--	--	--
	4-1-ADD55-25	12/6/2001	21 - 25	--	X	--	--	--	--	--	--	--	--
4-1-ADD56	4-1-ADD56-09	12/5/2001	6 - 9	--	X	--	--	--	--	--	--	--	--
	4-1-ADD56-15	12/5/2001	12 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD56-19	12/5/2001	16 - 19	--	X	--	--	--	--	--	--	--	--
	4-1-ADD56-24	12/5/2001	21 - 24	--	X	--	--	--	--	--	--	--	--
4-1-ADD62	4-1-ADD62-10	12/27/2001	6 - 10	--	X	--	--	--	--	--	--	--	--
	4-1-ADD62-15	12/27/2001	11 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD62-19	12/27/2001	16 - 19	--	X	--	--	--	--	--	--	--	--
	4-1-ADD62-24.5	12/27/2001	21 - 24.5	--	X	--	--	--	--	--	--	--	--
	4-1-ADD62-30	12/27/2001	27 - 30	--	X	--	--	--	--	--	--	--	--
4-1-ADD63	4-1-ADD63-09	1/15/2002	6 - 9	--	X	--	--	--	--	--	--	--	--
	4-1-ADD63-15	1/15/2002	11 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD63-19	1/15/2002	16 - 19	--	X	--	--	--	--	--	--	--	--

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Sample Location	Sample Identification	Date Sampled	Sample Depth (ft bgs)	Analyses Performed									
				SVOCs	VOCs	Pesticides	Total Metals	Dissolved Metals	PAHs	General Chemistry	TPH	Dissolved Gases	Organic Lead
	4-1-ADD63-24	1/15/2002	21 - 24	--	X	--	--	--	--	--	--	--	--
	4-1-ADD63-29	1/16/2002	26 - 29	--	X	--	--	--	--	--	--	--	--
	4-1-ADD63-34.5	1/16/2002	31 - 34.5	--	X	--	--	--	--	--	--	--	--
4-1-ADD71	4-1-ADD71-10.5	12/26/2001	7 - 10.5	--	X	--	--	--	--	--	--	--	--
	4-1-ADD71-15	12/26/2001	12 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD71-19	12/26/2001	16 - 19	--	X	--	--	--	--	--	--	--	--
	4-1-ADD71-24	12/26/2001	21 - 24	--	X	--	--	--	--	--	--	--	--
	4-1-ADD71-30	12/26/2001	27 - 30	--	X	--	--	--	--	--	--	--	--
	4-1-ADD71-36	12/26/2001	33 - 36	--	X	--	--	--	--	--	--	--	--
4-1-ADD80	4-1-ADD80-9	1/9/2002	6 - 9	--	X	--	--	--	--	--	--	--	--
	4-1-ADD80-21	1/9/2002	13.5 - 17	--	X	--	--	--	--	--	--	--	--
	4-1-ADD80-17	1/9/2002	18 - 21	--	X	--	--	--	--	--	--	--	--
4-1-ADD81	4-1-ADD81-9	1/7/2002	6 - 9	--	X	--	--	--	--	--	--	--	--
	4-1-ADD81-17	1/7/2002	13.5 - 17	--	X	--	--	--	--	--	--	--	--
	4-1-ADD81-21	1/7/2002	18 - 21	--	X	--	--	--	--	--	--	--	--
	4-1-ADD81-24	1/7/2002	21 - 24	--	X	--	--	--	--	--	--	--	--
4-1-ADD82	4-1-ADD82-9	1/9/2002	6 - 9	--	X	--	--	--	--	--	--	--	--
	4-1-ADD82-17	1/9/2002	13.5 - 17	--	X	--	--	--	--	--	--	--	--
	4-1-ADD82-21	1/9/2002	18 - 21	--	X	--	--	--	--	--	--	--	--
	4-1-ADD82-24	1/9/2002	21 - 24	--	X	--	--	--	--	--	--	--	--
4-1-ADD85	4-1-ADD85-10.5	1/10/2002	7 - 10.5	--	X	--	--	--	--	--	--	--	--
	4-1-ADD85-15	1/10/2002	12 - 15	--	X	--	--	--	--	--	--	--	--
	4-1-ADD85-19	1/10/2002	16 - 19	--	X	--	--	--	--	--	--	--	--
	4-1-ADD85-25	1/10/2002	21 - 25	--	X	--	--	--	--	--	--	--	--
	4-1-ADD85-30	1/10/2002	27 - 30	--	X	--	--	--	--	--	--	--	--
	4-1-ADD85-36	1/10/2002	33 - 36	--	X	--	--	--	--	--	--	--	--
Basewide Groundwater Monitoring, 2002													
398-MW4	398-MW4-A1078	6/20/2002	2.85 12.85	--	X	--	--	X	--	X	X	X	--
	398-MW4-A1296	9/6/2002	2.85 12.85	--	X	--	--	--	--	--	X	--	--
	398-MW4-A1579	12/10/2002	2.85 12.85	--	X	--	--	X	--	X	X	X	--
D03-01	D03-01-A1080	7/3/2002	49.5 - 59.5	--	X	--	--	X	--	X	X	--	--
	D03-01-A1581	12/10/2002	49.5 - 59.5	--	X	--	--	X	--	X	X	--	--
M03-04	M03-04-A1086	6/20/2002	3 - 11	--	X	--	--	X	--	X	X	--	--
	M03-04-A1298	9/6/2002	3 - 11	--	X	--	--	--	--	--	X	--	--
	M03-04-A1587	12/10/2002	3 - 11	--	X	--	--	X	--	X	X	--	--
M03-07	M03-07-A1090	6/21/2002	3 - 11	--	X	--	--	X	--	X	X	--	--
	M03-07-A1591	12/11/2002	3 - 11	--	X	--	--	X	--	X	X	--	--
M03-09	M03-09-A1301	9/6/2002	21 - 33	--	X	--	--	X	--	--	X	--	--
	M03-09-A1733	12/13/2002	44 - 36	--	X	--	--	X	--	--	X	--	--
MW97-3	MW97-3-A1099	7/3/2002	5 - 15	--	X	--	--	X	--	X	X	--	--
	MW97-3-A1313	9/6/2002	5 - 15	--	X	--	--	X	--	--	X	--	--
	MW97-3-A1600	12/10/2002	5 - 15	--	X	--	--	X	--	X	X	--	--
ENVIRONMENTAL BASELINE SURVEYS													
Environmental Baseline Survey Phase 2B, 1995													
116-Z21-005	116-0009	11/8/1995	8 - 9	X	--	X	X	--	--	--	--	--	--
118-Z21-007	118-0011	11/8/1995	8 - 9	X	--	X	X	--	--	--	--	--	--
129-003-007	129-0018	11/10/1995	8 - 9	--	--	--	X	--	--	--	--	--	--

TABLE 5-2 : SITE 3 GROUNDWATER SAMPLING SUMMARY

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Sample Location	Sample Identification	Date Sampled	Sample Depth (ft bgs)	Analyses Performed									
				SVOCs	VOCs	Pesticides	Total Metals	Dissolved Metals	PAHs	General Chemistry	TPH	Dissolved Gases	Organic Lead
Environmental Baseline Survey Phase 2C, 1998													
116-0013	116-0013	12/28/1998	9 - 12	--	X	--	X	--	--	--	--	--	--
	116-0014	12/28/1998	9 - 12	--	--	--	X	--	--	--	--	--	--
118-0015	118-0015	12/28/1998	9 - 12	--	X	--	X	--	--	--	--	--	--
	118-0016	12/28/1998	9 - 12	--	--	--	X	--	--	--	--	--	--
TOTAL PETROLEUM HYDROCARBON INVESTIGATION													
Fuel Line and Underground Storage Tank Investigations													
030-FLI-509	030-FLI-509	10/30/1998	4.5 - 5	--	X	--	--	--	--	--	X	--	--
097-001	030-USTF-031	9/1/1999	10	--	X	--	X	--	--	--	X	--	--
097-002	030-USTF-032	9/2/1999	10	--	X	--	X	--	--	--	X	--	--
097-003	030-USTF-033	9/1/1999	10	--	X	--	X	--	--	--	X	--	--
097-004	030-USTF-028	9/2/1999	10	--	X	--	X	--	--	--	X	--	--
097-005	030-USTF-029	9/2/1999	10	--	X	--	X	--	--	--	X	--	--
097-006	030-USTF-030	9/2/1999	10	--	X	--	X	--	--	--	X	--	--
097-007	030-USTF-034	9/2/1999	10	--	X	--	X	--	--	--	X	--	--
097-008	030-USTF-035	9/2/1999	10	--	X	--	X	--	--	--	X	--	--
097-009	030-USTF-036	9/2/1999	10	--	X	--	X	--	--	--	X	--	--
097-010	030-USTF-017	9/2/1999	10	--	X	--	--	--	--	--	--	--	--
393-002	030-USTF-090	9/7/1999	10	--	X	--	--	--	--	--	--	--	--
393-003	030-USTF-091	9/7/1999	10	--	X	--	--	--	--	--	--	--	--
398-11-ERM	398-W11	1/16/1995		--	X	--	--	--	--	--	X	--	--
398-13-ERM	398-W13	1/16/1995		--	X	--	--	--	--	--	X	--	--
398-14-ERM	398-W14	1/16/1995		--	X	--	--	--	--	--	X	--	--
398-15-ERM	398-W15	1/16/1995		--	X	--	--	--	--	--	X	--	--
398-16-ERM	398-W16	1/16/1995		--	X	--	--	--	--	--	X	--	--
398-17-ERM	398-W17	1/16/1995		--	X	--	--	--	--	--	X	--	--
398-18-ERM	398-W18	1/16/1995		--	X	--	--	--	--	--	X	--	--
398-1-MOJ	398-P1W	9/4/1997		--	--	--	--	--	--	--	X	--	--
398-2-MOJ	398-P2W	9/5/1997		--	X	--	--	--	--	--	X	--	--
398-MW3	398-MW3	2/9/1995	3.3 - 13.3	--	X	--	--	--	--	--	X	--	--
	398-MW3	12/17/1997	3.3 - 13.3	--	X	--	--	--	--	--	X	--	--
	398-MW3	3/17/1998	3.3 - 13.3	--	X	--	--	--	--	--	X	--	--
	398-MW3	9/28/1998	3.3 - 13.3	--	X	--	--	--	--	--	X	--	--
	398-MW3	4/6/1999	3.3 - 13.3	--	X	--	--	--	--	--	X	--	--
	030-CAP-033	5/1/2000	2.9 - 12.8	--	X	--	--	--	--	--	--	--	--
398-MW4	398-MW4	2/9/1995	2.9 - 12.9	--	X	--	--	--	--	--	X	--	--
	398-MW4	12/18/1997	2.9 - 12.9	--	X	--	--	--	--	--	X	--	--
	398-MW4	3/17/1998	2.9 - 12.9	--	X	--	--	--	--	--	X	--	--
	398-MW4	9/28/1998	2.9 - 12.9	--	X	--	--	--	--	--	X	--	--
	398-MW4	4/6/1999	2.9 - 12.9	--	X	--	--	--	--	--	X	--	--
	030-CAP-034	5/1/2000	2.9 - 12.10	--	X	--	--	--	--	--	--	--	--
CA03-02	030-CAP-008	4/26/2000	3 - 8	--	--	--	--	X	--	--	--	--	--
	030-CAP-008	4/26/2000	3 - 8	--	X	--	--	--	--	--	X	--	--

Notes:

--	Mot analyzed
bgs	Below ground surface
ft	Foot
General chemistry	Any combination of the following: percent moisture, pH, reactivity and/or TOC.
o-Pest	Organic pesticide
O & G	Oil and Grease
PAH	Polynuclear aromatic hydrocarbon
PCB	Polychlorinated hydrocarbon
SVOC	Semivolatile organic compound
TPH	Total petroleum hydrocarbon
VOC	Volatile organic compound
CMPL	Complete

TABLE 5-3: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

Phases 1 and 2A Investigation, 1991

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
1,1,1-TRICHLOROETHANE	14	0	0	--	--	--	5	100	0	0	1,200,000
1,1,2,2-TETRACHLOROETHANE	14	0	0	--	--	--	5	10	0	0	410
1,1,2-TRICHLOROETHANE	14	0	0	--	--	--	5	10	0	0	730
1,1-DICHLOROETHANE	15	0	0	--	--	--	5	10	0	0	2,800
1,1-DICHLOROETHENE	14	0	0	--	--	--	5	10	0	0	120,000
1,2-DICHLOROETHANE	14	0	0	--	--	--	5	10	0	0	280
1,2-DICHLOROETHENE (TOTAL)	14	0	0	--	--	--	5	10	0	0	43,000
1,2-DICHLOROPROPANE	14	0	0	--	--	--	5	10	0	0	340
2-BUTANONE	14	0	0	--	--	--	10	21	--	--	NA
2-HEXANONE	14	0	0	--	--	--	10	21	--	--	NA
4-METHYL-2-PENTANONE	14	0	0	--	--	--	5	10	--	--	NA
ACETONE	14	1	7	200	200	200	11	70	0	0	1,600,000
BENZENE	14	0	0	--	--	--	5	10	0	0	600
BROMODICHLOROMETHANE	14	0	0	--	--	--	5	10	0	0	820
BROMOFORM	14	0	0	--	--	--	5	10	0	0	62,000
BROMOMETHANE	14	0	0	--	--	--	10	21	0	0	3,900
CARBON DISULFIDE	14	0	0	--	--	--	5	15	0	0	360,000
CARBON TETRACHLORIDE	14	0	0	--	--	--	5	10	0	0	250
CHLOROBENZENE	14	0	0	--	--	--	5	10	0	0	150,000
CHLOROETHANE	14	0	0	--	--	--	10	21	0	0	3,000
CHLOROFORM	14	0	0	--	--	--	5	10	0	0	940
CHLOROMETHANE	14	0	0	--	--	--	10	21	0	0	1,200
CIS-1,3-DICHLOROPROPENE	14	0	0	--	--	--	5	10	0	0	780
DIBROMOCHLOROMETHANE	14	0	0	--	--	--	5	10	0	0	1,100
ETHYLBENZENE	14	0	0	--	--	--	5	10	0	0	8,900
METHYLENE CHLORIDE	14	0	0	--	--	--	6	29	0	0	9,100
STYRENE	14	0	0	--	--	--	5	10	0	0	1,700,000
TETRACHLOROETHENE	14	0	0	--	--	--	5	10	0	0	1,500
TOLUENE	14	12	86	38	6	130	5	6	0	0	520,000
TRANS-1,3-DICHLOROPROPENE	14	0	0	--	--	--	5	10	0	0	780
TRICHLOROETHENE	14	0	0	--	--	--	5	10	0	0	53

TABLE 5-3: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

Phases 1 and 2A Investigation, 1991

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
VINYL ACETATE	14	0	0	--	--	--	10	21	0	0	430,000
VINYL CHLORIDE	14	0	0	--	--	--	10	21	0	0	79
XYLENE (TOTAL)	14	0	0	--	--	--	5	10	0	0	270,000
Semivolatile Organic Compounds (µg/kg)											
1,2,4-TRICHLOROBENZENE	15	0	0	--	--	--	360	9,900	0	0	650,000
1,2-DICHLOROBENZENE	15	0	0	--	--	--	360	9,900	0	0	370,000
1,3-DICHLOROBENZENE	15	0	0	--	--	--	360	9,900	0	0	16,000
1,4-DICHLOROBENZENE	15	0	0	--	--	--	360	**9,900**	0	2	3,400
2,4,5-TRICHLOROPHENOL	15	0	0	--	--	--	1,700	48,000	0	0	6,100,000
2,4,6-TRICHLOROPHENOL	15	0	0	--	--	--	360	**9,900**	0	1	6,900
2,4-DICHLOROPHENOL	15	0	0	--	--	--	360	9,900	0	0	180,000
2,4-DIMETHYLPHENOL	15	0	0	--	--	--	360	9,900	0	0	1,200,000
2,4-DINITROPHENOL	15	0	0	--	--	--	1,700	48,000	0	0	120,000
2,4-DINITROTOLUENE	15	0	0	--	--	--	360	9,900	0	0	120,000
2,6-DINITROTOLUENE	15	0	0	--	--	--	360	9,900	0	0	61,000
2-CHLORONAPHTHALENE	15	0	0	--	--	--	360	9,900	--	--	NA
2-CHLOROPHENOL	15	0	0	--	--	--	360	9,900	0	0	63,000
2-METHYLPHENOL	15	0	0	--	--	--	360	9,900	--	--	NA
2-NITROANILINE	15	0	0	--	--	--	1,700	**48,000**	0	14	1,700
2-NITROPHENOL	15	0	0	--	--	--	360	9,900	--	--	NA
3,3'-DICHLOROBENZIDINE	15	0	0	--	--	--	710	**20,000**	0	6	1,100
3-NITROANILINE	15	0	0	--	--	--	1,700	48,000	--	--	NA
4,6-DINITRO-2-METHYLPHENOL	15	0	0	--	--	--	1,700	48,000	--	--	NA
4-BROMOPHENYL-PHENYLETHER	15	0	0	--	--	--	360	9,900	--	--	NA
4-CHLORO-3-METHYLPHENOL	15	0	0	--	--	--	360	9,900	--	--	NA
4-CHLOROANILINE	15	0	0	--	--	--	360	9,900	0	0	240,000
4-CHLOROPHENYL-PHENYLETHER	15	0	0	--	--	--	360	9,900	--	--	NA
4-METHYLPHENOL	15	0	0	--	--	--	360	9,900	0	0	310,000
4-NITROANILINE	15	0	0	--	--	--	1,700	48,000	--	--	NA
4-NITROPHENOL	15	0	0	--	--	--	1,700	48,000	--	--	NA

TABLE 5-3: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

Phases 1 and 2A Investigation, 1991

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Semivolatile Organic Compounds (µg/kg)											
BENZOIC ACID	15	0	0	--	--	--	1,700	48,000	0	0	100,000,000
BENZYL ALCOHOL	15	0	0	--	--	--	360	9,900	0	0	18,000,000
BIS(2-CHLOROETHOXY)METHANE	15	0	0	--	--	--	360	9,900	--	--	NA
BIS(2-CHLOROETHYL)ETHER	15	0	0	--	--	--	**360**	**9,900**	0	15	210
BIS(2-ETHYLHEXYL)PHTHALATE	15	0	0	--	--	--	360	9,900	0	0	35,000
BUTYLBENZYLPHTHALATE	15	0	0	--	--	--	360	9,900	0	0	12,000,000
DI-N-BUTYLPHTHALATE	15	0	0	--	--	--	360	9,900	--	--	NA
DI-N-OCTYLPHTHALATE	15	0	0	--	--	--	360	9,900	--	--	NA
DIBENZOFURAN	15	0	0	--	--	--	360	9,900	0	0	290,000
DIETHYLPHTHALATE	15	0	0	--	--	--	360	9,900	0	0	49,000,000
DIMETHYLPHTHALATE	15	0	0	--	--	--	360	9,900	0	0	100,000,000
HEXACHLOROBENZENE	15	0	0	--	--	--	**360**	**9,900**	0	15	300
HEXACHLOROBUTADIENE	15	0	0	--	--	--	360	**9,900**	0	1	6,200
HEXACHLOROCYCLOPENTADIENE	15	0	0	--	--	--	360	9,900	0	0	370,000
HEXACHLOROETHANE	15	0	0	--	--	--	360	9,900	0	0	35,000
ISOPHORONE	15	0	0	--	--	--	360	9,900	0	0	510,000
N-NITROSO-DI-N-PROPYLAMINE	15	0	0	--	--	--	**360**	**9,900**	0	15	69
N-NITROSODIPHENYLAMINE	15	0	0	--	--	--	360	9,900	0	0	99,000
NITROBENZENE	15	0	0	--	--	--	360	9,900	0	0	20,000
PENTACHLOROPHENOL	15	0	0	--	--	--	1,700	**48,000**	0	6	3,000
PHENOL	15	0	0	--	--	--	360	9,900	0	0	37,000,000
Metals (mg/kg)											
ALUMINUM	15	15	100	8,110	3,820	22,400	0	0	0	0	76,000
ANTIMONY	15	0	0	--	--	--	6.5	9.9	0	0	31.0
ARSENIC	15	3	20	**21.3**	**21**	**22**	**11**	**12**	3	12	0.39
BARIUM	15	14	93	61.8	24	260	24	24	0	0	5,400
BERYLLIUM	15	0	0	--	--	--	1.1	1.6	0	0	150
CADMIUM	15	0	0	--	--	--	1.1	1.6	0	0	37.0
CALCIUM	15	15	100	3,480	1,000	20,000	0	0	--	--	NA
CHROMIUM	15	15	100	34.3	22	79	0	0	0	0	210

TABLE 5-3: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

Phases 1 and 2A Investigation, 1991

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Metals (mg/kg)											
COBALT	15	5	33	9.5	6.4	14	5.4	6.2	0	0	900
COPPER	15	12	80	31.2	6.9	110	5.8	6.2	0	0	3,100
IRON	15	15	100	14,100	6,980	**33,300**	0	0	3	0	23,000
LEAD	15	6	40	43.6	9.8	100	5.4	6.2	0	0	150
MAGNESIUM	15	15	100	3,870	2,100	10,000	0	0	--	--	NA
MANGANESE	15	15	100	141	58	420	0	0	0	0	1,800
MOLYBDENUM	15	0	0	--	--	--	5.4	8.2	0	0	390
NICKEL	15	15	100	35.7	15	84	0	0	0	0	1,600
POTASSIUM	15	15	100	1,360	630	4,100	0	0	--	--	NA
SELENIUM	15	0	0	--	--	--	11	16	0	0	390
SILVER	15	0	0	--	--	--	5.4	8.2	0	0	390
SODIUM	15	8	53	3,510	1,200	6,400	540	610	--	--	NA
THALLIUM	15	0	0	--	--	--	**11**	**16**	0	15	5.2
TITANIUM	15	15	100	389	280	670	0	0	--	--	NA
VANADIUM	15	15	100	26.3	16	57	0	0	0	0	550
ZINC	15	15	100	43.6	16	120	0	0	0	0	23,000

TABLE 5-3: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

Phases 1 and 2A Investigation, 1991

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values elevated above the PRG

–	Not detected
mg/kg	Milligrams per kilogram
NA	No PRG available
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)
µg/kg	Micrograms per kilogram

TABLE 5-4: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Phases 1 and 2A Investigation, 1991

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
1,1,1-TRICHLOROETHANE	3	0	0	--	--	--	5	5	0	0	3,200	200
1,1,2,2-TETRACHLOROETHANE	3	0	0	--	--	--	**5**	**5**	0	3	0.06	1
1,1,2-TRICHLOROETHANE	3	0	0	--	--	--	**5**	**5**	0	3	0.2	5
1,1-DICHLOROETHANE	3	0	0	--	--	--	**5**	**5**	0	3	2	5
1,1-DICHLOROETHENE	3	0	0	--	--	--	5	5	0	0	340	6
1,2-DICHLOROETHANE	3	0	0	--	--	--	**5**	**5**	0	3	0.1	0.5
1,2-DICHLOROETHENE (TOTAL)	3	0	0	--	--	--	5	5	0	0	61	NA
1,2-DICHLOROPROPANE	3	0	0	--	--	--	**5**	**5**	0	3	0.2	5
2-BUTANONE	3	0	0	--	--	--	10	10	--	--	NA	NA
2-HEXANONE	3	0	0	--	--	--	10	10	--	--	NA	NA
4-METHYL-2-PENTANONE	3	0	0	--	--	--	10	10	--	--	NA	NA
ACETONE	3	0	0	--	--	--	10	10	0	0	610	NA
BENZENE	3	0	0	--	--	--	**5**	**5**	0	3	0.3	1
BROMODICHLOROMETHANE	3	0	0	--	--	--	**5**	**5**	0	3	0.2	80
BROMOFORM	3	0	0	--	--	--	5	5	0	0	9	80
BROMOMETHANE	3	0	0	--	--	--	**10**	**10**	0	3	9	NA
CARBON DISULFIDE	3	0	0	--	--	--	5	5	0	0	1,000	NA
CARBON TETRACHLORIDE	3	0	0	--	--	--	**5**	**5**	0	3	0.2	0.5
CHLOROBENZENE	3	0	0	--	--	--	5	5	0	0	110	70
CHLOROETHANE	3	0	0	--	--	--	**10**	**10**	0	3	5	NA
CHLOROFORM	3	0	0	--	--	--	**5**	**5**	0	3	0.5	80
CHLOROMETHANE	3	0	0	--	--	--	**10**	**10**	0	3	2	NA
CIS-1,3-DICHLOROPROPENE	3	0	0	--	--	--	**5**	**5**	0	3	0.4	0.5
DIBROMOCHLOROMETHANE	3	0	0	--	--	--	**5**	**5**	0	3	0.1	80
ETHYLBENZENE	3	0	0	--	--	--	**5**	**5**	0	3	3	300
METHYLENE CHLORIDE	3	0	0	--	--	--	**5**	**5**	0	3	4	NA
STYRENE	3	0	0	--	--	--	5	5	0	0	1,600	100
TETRACHLOROETHENE	3	0	0	--	--	--	**5**	**5**	0	3	0.7	5
TOLUENE	3	0	0	--	--	--	5	5	0	0	720	150
TRANS-1,3-DICHLOROPROPENE	3	0	0	--	--	--	**5**	**5**	0	3	0.4	0.5
TRICHLOROETHENE	3	0	0	--	--	--	**5**	**5**	0	3	0.03	5

TABLE 5-4: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Phases 1 and 2A Investigation, 1991

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
VINYL ACETATE	3	0	0	--	--	--	5	5	0	0	410	NA
VINYL CHLORIDE	3	0	0	--	--	--	**10**	**10**	0	3	0.02	0.5
XYLENE (TOTAL)	3	0	0	--	--	--	5	5	0	0	210	1,800
Semivolatile Organic Compounds (µg/L)												
1,2,4-TRICHLOROBENZENE	3	0	0	--	--	--	10	10	0	0	190	5
1,2-DICHLOROBENZENE	3	0	0	--	--	--	10	10	0	0	370	600
1,3-DICHLOROBENZENE	3	0	0	--	--	--	**10**	**10**	0	3	6	NA
1,4-DICHLOROBENZENE	3	0	0	--	--	--	**10**	**10**	0	3	0.5	5
2,4,5-TRICHLOROPHENOL	3	0	0	--	--	--	50	50	0	0	3,600	50
2,4,6-TRICHLOROPHENOL	3	0	0	--	--	--	**10**	**10**	0	3	1	NA
2,4-DICHLOROPHENOL	3	0	0	--	--	--	10	10	0	0	110	NA
2,4-DIMETHYLPHENOL	3	0	0	--	--	--	10	10	0	0	730	NA
2,4-DINITROPHENOL	3	0	0	--	--	--	50	50	0	0	73	NA
2,4-DINITROTOLUENE	3	0	0	--	--	--	10	10	0	0	73	NA
2,6-DINITROTOLUENE	3	0	0	--	--	--	10	10	0	0	36	NA
2-CHLORONAPHTHALENE	3	0	0	--	--	--	10	10	--	--	NA	NA
2-CHLOROPHENOL	3	0	0	--	--	--	10	10	0	0	30	NA
2-METHYLNAPHTHALENE	3	0	0	--	--	--	10	10	--	--	NA	NA
2-METHYLPHENOL	3	0	0	--	--	--	10	10	0	0	1,800	NA
2-NITROANILINE	3	0	0	--	--	--	**50**	**50**	0	3	1	NA
2-NITROPHENOL	3	0	0	--	--	--	10	10	--	--	NA	NA
3,3'-DICHLOROBENZIDINE	3	0	0	--	--	--	**20**	**20**	0	3	0.2	NA
3-NITROANILINE	3	0	0	--	--	--	50	50	--	--	NA	NA
4,6-DINITRO-2-METHYLPHENOL	3	0	0	--	--	--	50	50	--	--	NA	NA
4-BROMOPHENYL-PHENYLETHER	3	0	0	--	--	--	10	10	--	--	NA	NA
4-CHLORO-3-METHYLPHENOL	3	0	0	--	--	--	10	10	--	--	NA	NA
4-CHLOROANILINE	3	0	0	--	--	--	10	10	0	0	150	NA
4-CHLOROPHENYL-PHENYLETHER	3	0	0	--	--	--	10	10	--	--	NA	NA
4-METHYLPHENOL	3	0	0	--	--	--	10	10	0	0	180	NA
4-NITROANILINE	3	0	0	--	--	--	50	50	--	--	NA	NA

TABLE 5-4: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Phases 1 and 2A Investigation, 1991

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Semivolatile Organic Compounds (µg/L)												
4-NITROPHENOL	3	0	0	--	--	--	50	50	--	--	NA	NA
ACENAPHTHENE	3	0	0	--	--	--	10	10	0	0	370	NA
ANTHRACENE	3	0	0	--	--	--	10	10	0	0	1,800	NA
BENZO(A)ANTHRACENE	3	0	0	--	--	--	**10**	**10**	0	3	0.09	0.1
BENZO(A)PYRENE	3	0	0	--	--	--	**10**	**10**	0	3	0.009	0.2
BENZO(B)FLUORANTHENE	3	0	0	--	--	--	**10**	**10**	0	3	0.09	NA
BENZO(G,H,I)PERYLENE	3	0	0	--	--	--	10	10	--	--	NA	NA
BENZO(K)FLUORANTHENE	3	0	0	--	--	--	**10**	**10**	0	3	0.06	NA
BENZOIC ACID	3	0	0	--	--	--	50	50	0	0	150,000	NA
BENZYL ALCOHOL	3	0	0	--	--	--	10	10	0	0	11,000	NA
BIS(2-CHLOROETHOXY)METHANE	3	0	0	--	--	--	10	10	--	--	NA	NA
BIS(2-CHLOROETHYL)ETHER	3	0	0	--	--	--	**10**	**10**	0	3	0.01	NA
BIS(2-ETHYLHEXYL)PHTHALATE	3	0	0	--	--	--	**10**	**10**	0	3	5	NA
BUTYLBENZYLPHTHALATE	3	0	0	--	--	--	10	10	0	0	7,300	NA
CHRYSENE	3	0	0	--	--	--	**10**	**10**	0	3	0.6	NA
DI-N-BUTYLPHTHALATE	3	0	0	--	--	--	10	10	--	--	NA	NA
DI-N-OCTYLPHTHALATE	3	0	0	--	--	--	10	10	--	--	NA	NA
DIBENZO(A,H)ANTHRACENE	3	0	0	--	--	--	**10**	**10**	0	3	0.009	NA
DIBENZOFURAN	3	0	0	--	--	--	10	10	0	0	24	NA
DIETHYLPHTHALATE	3	0	0	--	--	--	10	10	0	0	29,000	NA
DIMETHYLPHTHALATE	3	0	0	--	--	--	10	10	0	0	360,000	NA
FLUORANTHENE	3	0	0	--	--	--	10	10	0	0	1,500	NA
FLUORENE	3	0	0	--	--	--	10	10	0	0	240	NA
HEXACHLOROBENZENE	3	0	0	--	--	--	**10**	**10**	0	3	0.04	1
HEXACHLOROBUTADIENE	3	0	0	--	--	--	**10**	**10**	0	3	0.9	NA
HEXACHLOROCYCLOPENTADIENE	3	0	0	--	--	--	10	10	0	0	220	NA
HEXACHLOROETHANE	3	0	0	--	--	--	**10**	**10**	0	3	5	NA
INDENO(1,2,3-CD)PYRENE	3	0	0	--	--	--	**10**	**10**	0	3	0.09	NA
ISOPHORONE	3	0	0	--	--	--	10	10	0	0	71	NA
N-NITROSO-DI-N-PROPYLAMINE	3	0	0	--	--	--	**10**	**10**	0	3	0.01	NA
N-NITROSODIPHENYLAMINE	3	0	0	--	--	--	10	10	0	0	14	NA

TABLE 5-4: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Phases 1 and 2A Investigation, 1991

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Semivolatile Organic Compounds (µg/L)												
NAPHTHALENE	3	0	0	--	--	--	10	10	0	3	6	NA
NITROBENZENE	3	0	0	--	--	--	10	10	0	3	3	NA
PENTACHLOROPHENOL	3	0	0	--	--	--	50	50	0	3	0.6	1
PHENANTHRENE	3	0	0	--	--	--	10	10	--	--	NA	NA
PHENOL	3	0	0	--	--	--	10	10	0	0	22,000	NA
PYRENE	3	0	0	--	--	--	10	10	0	0	180	NA
Metals (µg/L)												
Filtered												
ALUMINUM	3	3	100	54,700	40,000	77,000	0	0	3	0	36,000	NA
ANTIMONY	3	0	0	--	--	--	60	60	0	3	15.0	6.0
ARSENIC	3	0	0	--	--	--	50	100	0	3	0.045	10.0
BARIUM	3	3	100	427	330	580	0	0	0	0	2,600	1,000
BERYLLIUM	3	0	0	--	--	--	5	5	0	0	73.0	4.0
CADMIUM	3	0	0	--	--	--	5	5	0	0	18.0	5.0
CALCIUM	3	3	100	175,000	113,000	261,000	0	0	--	--	NA	NA
CHROMIUM	3	3	100	163	120	250	0	0	0	0	55,000	50.0
COBALT	3	1	33	50.0	50	50	50	50	0	0	730	NA
COPPER	3	3	100	67.7	44	100	0	0	0	0	1,500	1,300
IRON	3	3	100	72,000	54,000	95,000	0	0	3	0	11,000	NA
LEAD	3	0	0	--	--	--	50	50	--	--	NA	15.0
MAGNESIUM	3	3	100	346,000	58,000	825,000	0	0	--	--	NA	NA
MANGANESE	3	3	100	2,230	1,800	2,700	0	0	3	0	880	NA
MOLYBDENUM	3	0	0	--	--	--	50	50	0	0	180	NA
NICKEL	3	3	100	180	150	240	0	0	0	0	730	100
POTASSIUM	3	3	100	122,000	31,000	236,000	0	0	--	--	NA	NA
SELENIUM	3	1	33	54.0	54	54	50	50	0	0	180	50.0
SILVER	3	0	0	--	--	--	10	10	0	0	180	NA
SODIUM	3	3	100	3,290,000	199,000	7,525,000	0	0	--	--	NA	NA
THALLIUM	3	1	33	55.0	55	55	50	50	1	2	2.4	2.0
TITANIUM	3	3	100	2,000	1,500	2,700	0	0	--	--	NA	NA
VANADIUM	3	3	100	147	110	220	0	0	0	0	260	NA

TABLE 5-4: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Phases 1 and 2A Investigation, 1991

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Metals (µg/L)												
Filtered												
ZINC	3	3	100	147	110	190	0	0	0	0	11,000	NA

TABLE 5-4: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Phases 1 and 2A Investigation, 1991

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
MCL	Maximum Contaminant Level
NA	No criteria available
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or CAL-modified (2002)
µg/L	Micrograms per liter

TABLE 5-5: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

Follow-on Investigation, 1994

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
1,1,1-TRICHLOROETHANE	16	0	0	--	--	--	10	13,000	0	0	1,200,000
1,1,2,2-TETRACHLOROETHANE	16	0	0	--	--	--	10	**13,000**	0	4	410
1,1,2-TRICHLOROETHANE	16	0	0	--	--	--	10	**13,000**	0	4	730
1,1-DICHLOROETHANE	16	0	0	--	--	--	10	**13,000**	0	2	2,800
1,1-DICHLOROETHENE	16	0	0	--	--	--	10	13,000	0	0	120,000
1,2-DICHLOROETHANE	16	0	0	--	--	--	10	**13,000**	0	4	280
1,2-DICHLOROETHENE (TOTAL)	16	0	0	--	--	--	10	13,000	0	0	43,000
1,2-DICHLOROPROPANE	16	0	0	--	--	--	10	**13,000**	0	4	340
2-BUTANONE	16	1	6	240	240 J	240 J	10	13,000	--	--	NA
2-HEXANONE	16	0	0	--	--	--	10	13,000	--	--	NA
4-METHYL-2-PENTANONE	16	0	0	--	--	--	10	13,000	--	--	NA
ACETONE	16	2	13	360	140 J	580 J	11	13,000	0	0	1,600,000
BENZENE	16	1	6	7,500	**7,500 J**	**7,500 J**	10	**6,200**	1	3	600
BROMODICHLOROMETHANE	16	0	0	--	--	--	10	**13,000**	0	4	820
BROMOFORM	16	0	0	--	--	--	10	13,000	0	0	62,000
BROMOMETHANE	16	0	0	--	--	--	10	**13,000**	0	2	3,900
CARBON DISULFIDE	16	2	13	7	3 J	10 J	10	13,000	0	0	360,000
CARBON TETRACHLORIDE	16	0	0	--	--	--	10	**13,000**	0	4	250
CHLOROBENZENE	16	0	0	--	--	--	10	13,000	0	0	150,000
CHLOROETHANE	16	0	0	--	--	--	10	**13,000**	0	2	3,000
CHLOROFORM	16	0	0	--	--	--	10	**13,000**	0	4	940
CHLOROMETHANE	16	0	0	--	--	--	10	**13,000**	0	4	1,200
CIS-1,3-DICHLOROPROPENE	16	0	0	--	--	--	10	**13,000**	0	4	780
DIBROMOCHLOROMETHANE	16	0	0	--	--	--	10	**13,000**	0	4	1,100
ETHYLBENZENE	16	5	31	11,000	130	**50,000**	10	16	1	0	8,900
ETHYLENE DIBROMIDE	13	0	0	--	--	--	11	13,000	--	--	NA
METHYLENE CHLORIDE	16	0	0	--	--	--	10	**13,000**	0	1	9,100
STYRENE	16	0	0	--	--	--	10	13,000	0	0	1,700,000
TETRACHLOROETHENE	16	0	0	--	--	--	10	**13,000**	0	2	1,500
TOLUENE	16	7	44	31,000	2 J	210,000	10	16	0	0	520,000
TRANS-1,3-DICHLOROPROPENE	16	0	0	--	--	--	10	**13,000**	0	4	780

TABLE 5-5: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

Follow-on Investigation, 1994

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
TRICHLOROETHENE	16	0	0	--	--	--	10	**13,000**	0	4	53
VINYL CHLORIDE	16	0	0	--	--	--	10	**13,000**	0	4	79
XYLENE (TOTAL)	16	6	38	47,000	6 J	250,000	10	16	0	0	270,000
Total Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	16	0	0	--	--	--	10	54	--	--	NA
GASOLINE RANGE ORGANICS	16	8	50	3,100	0.63 J	19,700 J	0.53	0.81	--	--	NA
JP5 RANGE ORGANICS	16	0	0	--	--	--	10	54	--	--	NA
MOTOR OIL RANGE ORGANICS	16	11	69	630	24 J	3,700 J	21	23	--	--	NA
Metals (mg/kg)											
ALUMINUM	13	13	100	8,950	3,740	19,600	0	0	0	0	76,000
ANTIMONY	13	3	23	1.0	0.92 J	1.1 J	0.52	1.1	0	0	31.0
ARSENIC	13	11	85	**4.5**	**1.2 J**	**9.2**	**1.5**	**1.6**	11	2	0.39
BARIUM	13	13	100	128	17.3 J	1,060	0	0	0	0	5,400
BERYLLIUM	13	10	77	0.77	0.3 J	1.9	0.21	0.22	0	0	150
CADMIUM	13	7	54	0.36	0.07 J	1.3 J	0.06	0.09	0	0	37.0
CALCIUM	13	13	100	6,430	1,460	21,000	0	0	--	--	NA
CHROMIUM	13	12	92	36.8	24.8	54.2 J	1.9	1.9	0	0	210
COBALT	13	11	85	7.7	3.2 J	14.2	3.3	5.3	0	0	900
COPPER	13	13	100	24.1	4.9 J	119	0	0	0	0	3,100
IRON	13	13	100	15,900	7,300 J	**34,300 J**	0	0	3	0	23,000
LEAD	13	13	100	**205**	1.7	**2,380**	0	0	1	0	150
MAGNESIUM	13	13	100	3,670	1,830	8,760	0	0	--	--	NA
MANGANESE	13	13	100	235	57.7	887 J	0	0	0	0	1,800
MERCURY	13	3	23	0.48	0.31	0.82 J	0.15	0.24	0	0	23.0
MOLYBDENUM	13	0	0	--	--	--	2.7	3.9	0	0	390
NICKEL	13	12	92	33.7	16.2	58.2	3.5	3.5	0	0	1,600
POTASSIUM	13	13	100	1,210	213 J	2,950	0	0	--	--	NA
SELENIUM	13	0	0	--	--	--	0.56	0.93	0	0	390
SILVER	13	1	8	2.4	2.4 J	2.4 J	0.19	0.43	0	0	390

TABLE 5-5: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

Follow-on Investigation, 1994

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Metals (mg/kg)											
SODIUM	13	9	69	1,550	399J	5,800	328	693	--	--	NA
THALLIUM	13	0	0	--	--	--	0.41	2.2	0	0	5.2
VANADIUM	13	13	100	32.7	15.6	69.3	0	0	0	0	550
ZINC	13	13	100	139	17.8J	1,260	0	0	0	0	23,000

TABLE 5-5: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

Follow-on Investigation, 1994

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
J	Estimated value
mg/kg	Milligrams per kilogram
NA	No PRG available
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)
µg/kg	Micrograms per kilogram

TABLE 5-6: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Follow-on Investigation, 1994

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
1,1,1-TRICHLOROETHANE	34	0	0	--	--	--	1	25	0	0	3,200	200
1,1,2,2-TETRACHLOROETHANE	34	0	0	--	--	--	1	25	0	34	0.06	1
1,1,2-TRICHLOROETHANE	34	0	0	--	--	--	1	25	0	34	0.2	5
1,1-DICHLOROETHANE	33	0	0	--	--	--	1	25	0	2	2	5
1,1-DICHLOROETHENE	34	0	0	--	--	--	1	25	0	0	340	6
1,2-DICHLOROETHANE	34	0	0	--	--	--	0.5	12	0	34	0.1	0.5
1,2-DICHLOROETHENE (TOTAL)	33	1	3	0.9	0.9J	0.9J	1	25	0	0	61	NA
1,2-DICHLOROPROPANE	34	0	0	--	--	--	1	25	0	34	0.2	5
2-BUTANONE	6	1	17	71	71J	71J	3	15	--	--	NA	NA
2-HEXANONE	34	0	0	--	--	--	2	50	--	--	NA	NA
4-METHYL-2-PENTANONE	34	0	0	--	--	--	2	50	--	--	NA	NA
ACETONE	10	2	20	30	27J	33J	2	30	0	0	610	NA
BENZENE	33	5	15	480	6	1,100	0.5	1	5	28	0.3	1
BROMODICHLOROMETHANE	34	0	0	--	--	--	1	25	0	34	0.2	80
BROMOFORM	34	0	0	--	--	--	1	25	0	2	9	80
BROMOMETHANE	34	0	0	--	--	--	1	25	0	2	9	NA
CARBON DISULFIDE	34	1	3	2	2	2	1	25	0	0	1,000	NA
CARBON TETRACHLORIDE	34	0	0	--	--	--	0.5	12	0	34	0.2	0.5
CHLOROBENZENE	34	0	0	--	--	--	1	25	0	0	110	70
CHLOROETHANE	34	0	0	--	--	--	2	50	0	2	5	NA
CHLOROFORM	34	1	3	2	2	2	1	25	1	33	0.5	80
CHLOROMETHANE	34	0	0	--	--	--	2	50	0	34	2	NA
CIS-1,3-DICHLOROPROPENE	34	0	0	--	--	--	0.5	12	0	34	0.4	0.5
DIBROMOCHLOROMETHANE	34	0	0	--	--	--	1	25	0	34	0.1	80
ETHYLBENZENE	34	5	15	100	2	290	1	1	4	0	3	300
ETHYLENE DIBROMIDE	11	0	0	--	--	--	1	1	--	--	NA	0.05
METHYLENE CHLORIDE	34	0	0	--	--	--	1	25	0	2	4	NA
STYRENE	34	0	0	--	--	--	1	25	0	0	1,600	100
TETRACHLOROETHENE	34	0	0	--	--	--	1	25	0	34	0.7	5
TOLUENE	34	6	18	810	2	2,300	1	1	2	0	720	150
TRANS-1,3-DICHLOROPROPENE	34	0	0	--	--	--	0.5	12	0	34	0.4	0.5

TABLE 5-6: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Follow-on Investigation, 1994

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
TRICHLOROETHENE	34	1	3	**1**	**1**	**1**	**1**	**25**	1	33	0.03	5
VINYL CHLORIDE	34	0	0	--	--	--	**0.5**	**12**	0	34	0.02	0.5
XYLENE (TOTAL)	34	7	21	**490**	3	**1,500**	1	1	3	0	210	1,800
Semivolatile Organic Compounds (µg/L)												
1,2,4-TRICHLOROBENZENE	26	0	0	--	--	--	10	10	0	0	190	5
1,2-DICHLOROBENZENE	26	0	0	--	--	--	5	5	0	0	370	600
1,3-DICHLOROBENZENE	26	0	0	--	--	--	5	5	0	0	6	NA
1,4-DICHLOROBENZENE	26	0	0	--	--	--	**5**	**5**	0	26	0.5	5
2,2'-OXYBIS(1-CHLOROPROPANE)	26	0	0	--	--	--	10	10	--	--	NA	NA
2,4,5-TRICHLOROPHENOL	26	0	0	--	--	--	25	25	0	0	3,600	50
2,4,6-TRICHLOROPHENOL	26	0	0	--	--	--	**10**	**10**	0	26	1	NA
2,4-DICHLOROPHENOL	26	0	0	--	--	--	10	10	0	0	110	NA
2,4-DIMETHYLPHENOL	26	3	12	45	39	53	10	10	0	0	730	NA
2,4-DINITROPHENOL	25	0	0	--	--	--	25	25	0	0	73	NA
2,4-DINITROTOLUENE	26	0	0	--	--	--	10	10	0	0	73	NA
2,6-DINITROTOLUENE	26	0	0	--	--	--	10	10	0	0	36	NA
2-CHLORONAPHTHALENE	26	0	0	--	--	--	10	10	--	--	NA	NA
2-CHLOROPHENOL	26	0	0	--	--	--	10	10	0	0	30	NA
2-METHYLNAPHTHALENE	26	2	8	5	4J	5J	10	10	--	--	NA	NA
2-METHYLPHENOL	26	4	15	81	19	220	10	10	0	0	1,800	NA
2-NITROANILINE	26	0	0	--	--	--	**25**	**25**	0	26	1	NA
2-NITROPHENOL	26	0	0	--	--	--	10	10	--	--	NA	NA
3,3'-DICHLOROBENZIDINE	26	0	0	--	--	--	**10**	**10**	0	26	0.2	NA
3-NITROANILINE	26	0	0	--	--	--	25	25	--	--	NA	NA
4,6-DINITRO-2-METHYLPHENOL	26	0	0	--	--	--	25	25	--	--	NA	NA
4-BROMOPHENYL-PHENYLETHER	26	0	0	--	--	--	10	10	--	--	NA	NA
4-CHLORO-3-METHYLPHENOL	26	1	4	1	1J	1J	10	10	--	--	NA	NA
4-CHLOROANILINE	26	0	0	--	--	--	10	10	0	0	150	NA
4-CHLOROPHENYL-PHENYLETHER	26	0	0	--	--	--	10	10	--	--	NA	NA
4-METHYLPHENOL	26	3	12	28	6J	39	10	10	0	0	180	NA

TABLE 5-6: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

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Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Semivolatile Organic Compounds (µg/L)												
4-NITROANILINE	26	0	0	--	--	--	25	25	--	--	NA	NA
4-NITROPHENOL	26	0	0	--	--	--	25	25	--	--	NA	NA
ACENAPHTHENE	26	2	8	1	0.9J	1J	10	10	0	0	370	NA
ACENAPHTHYLENE	26	0	0	--	--	--	10	10	--	--	NA	NA
ANTHRACENE	26	0	0	--	--	--	10	10	0	0	1,800	NA
BENZO(A)ANTHRACENE	26	0	0	--	--	--	**10**	**10**	0	26	0.09	0.1
BENZO(A)PYRENE	26	1	4	**0.5**	**0.5J**	**0.5J**	**10**	**10**	1	25	0.009	0.2
BENZO(B)FLUORANTHENE	26	0	0	--	--	--	**10**	**10**	0	26	0.09	NA
BENZO(G,H,I)PERYLENE	26	0	0	--	--	--	10	10	--	--	NA	NA
BENZO(K)FLUORANTHENE	26	0	0	--	--	--	**10**	**10**	0	26	0.06	NA
BIS(2-CHLOROETHOXY)METHANE	26	0	0	--	--	--	10	10	--	--	NA	NA
BIS(2-CHLOROETHYL)ETHER	26	0	0	--	--	--	**10**	**10**	0	26	0.01	NA
BIS(2-ETHYLHEXYL)PHTHALATE	26	0	0	--	--	--	4	**62**	0	4	5	NA
BUTYLBENZYLPHTHALATE	26	0	0	--	--	--	10	10	0	0	7,300	NA
CARBAZOLE	26	0	0	--	--	--	**10**	**10**	0	26	3	NA
CHRYSENE	26	0	0	--	--	--	**10**	**10**	0	26	0.6	NA
DI-N-BUTYLPHTHALATE	26	0	0	--	--	--	10	10	--	--	NA	NA
DI-N-OCTYLPHTHALATE	26	0	0	--	--	--	10	10	--	--	NA	NA
DIBENZO(A,H)ANTHRACENE	26	0	0	--	--	--	**10**	**10**	0	26	0.009	NA
DIBENZOFURAN	26	0	0	--	--	--	10	10	0	0	24	NA
DIETHYLPHTHALATE	26	0	0	--	--	--	10	10	0	0	29,000	NA
DIMETHYLPHTHALATE	26	0	0	--	--	--	10	10	0	0	360,000	NA
FLUORANTHENE	26	0	0	--	--	--	10	10	0	0	1,500	NA
FLUORENE	26	0	0	--	--	--	10	10	0	0	240	NA
HEXACHLOROBENZENE	26	0	0	--	--	--	**10**	**10**	0	26	0.04	1
HEXACHLOROBUTADIENE	26	0	0	--	--	--	**10**	**10**	0	26	0.9	NA
HEXACHLOROCYCLOPENTADIENE	26	0	0	--	--	--	10	10	0	0	220	NA
HEXACHLOROETHANE	26	0	0	--	--	--	**10**	**10**	0	26	5	NA
INDENO(1,2,3-CD)PYRENE	26	1	4	**0.6**	**0.6J**	**0.6J**	**10**	**10**	1	25	0.09	NA
ISOPHORONE	26	0	0	--	--	--	10	10	0	0	71	NA
N-NITROSO-DI-N-PROPYLAMINE	26	0	0	--	--	--	**10**	**10**	0	26	0.01	NA

TABLE 5-6: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Follow-on Investigation, 1994

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Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Semivolatile Organic Compounds (µg/L)												
N-NITROSODIPHENYLAMINE	26	0	0	--	--	--	10	10	0	0	14	NA
NAPHTHALENE	26	5	19	5	0.6J	**16J**	**10**	**10**	1	21	6	NA
NITROBENZENE	26	0	0	--	--	--	**10**	**10**	0	26	3	NA
PENTACHLOROPHENOL	26	1	4	**1**	**1J**	**1J**	**25**	**25**	1	25	0.6	1
PHENANTHRENE	26	0	0	--	--	--	10	10	--	--	NA	NA
PHENOL	26	4	15	320	85J	710	10	10	0	0	22,000	NA
PYRENE	26	5	19	0.8	0.5J	1J	10	10	0	0	180	NA
PCBs/Pesticides (µg/L)												
4,4'-DDD	1	0	0	--	--	--	0.1	0.1	0	0	0.3	NA
4,4'-DDE	1	0	0	--	--	--	0.1	0.1	0	0	0.2	NA
4,4'-DDT	1	0	0	--	--	--	0.1	0.1	0	0	0.2	NA
ALDRIN	1	0	0	--	--	--	***0.05***	***0.05***	0	1	0.004	NA
ALPHA-BHC	1	0	0	--	--	--	0.05	0.05	--	--	NA	NA
ALPHA-CHLORDANE	1	0	0	--	--	--	0.05	0.05	0	0	0.2	NA
AROCLOR-1016	1	0	0	--	--	--	0.5	0.5	0	0	1	NA
AROCLOR-1221	1	0	0	--	--	--	**0.5**	**0.5**	0	1	0.03	NA
AROCLOR-1232	1	0	0	--	--	--	***0.5***	***0.5***	0	1	0.03	NA
AROCLOR-1242	1	0	0	--	--	--	**0.5**	**0.5**	0	1	0.03	NA
AROCLOR-1248	1	0	0	--	--	--	**0.5**	**0.5**	0	1	0.03	NA
AROCLOR-1254	1	0	0	--	--	--	**0.5**	**0.5**	0	1	0.03	NA
AROCLOR-1260	1	0	0	--	--	--	**0.5**	**0.5**	0	1	0.03	NA
BETA-BHC	1	0	0	--	--	--	*0.05*	0.05	--	--	NA	NA
DELTA-BHC	1	0	0	--	--	--	0.05	0.05	--	--	NA	NA
DIELDRIN	1	0	0	--	--	--	**0.1**	**0.1**	0	1	0.004	NA
ENDOSULFAN I	1	0	0	--	--	--	0.05	0.05	0	0	220	NA
ENDOSULFAN II	1	0	0	--	--	--	0.1	0.1	--	--	NA	NA
ENDOSULFAN SULFATE	1	0	0	--	--	--	0.1	0.1	--	--	NA	NA
ENDRIN	1	0	0	--	--	--	0.1	0.1	0	0	11	2
ENDRIN ALDEHYDE	1	0	0	--	--	--	0.1	0.1	--	--	NA	NA
ENDRIN KETONE	1	0	0	--	--	--	0.1	0.1	--	--	NA	NA

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PCBs/Pesticides (µg/L)												
GAMMA-BHC (LINDANE)	1	0	0	--	--	--	0.05	0.05	--	--	NA	NA
GAMMA-CHLORDANE	1	0	0	--	--	--	0.05	0.05	0	0	0.2	NA
HEPTACHLOR	1	0	0	--	--	--	**0.05**	**0.05**	0	1	0.02	0.01
HEPTACHLOR EPOXIDE	1	0	0	--	--	--	**0.01**	**0.01**	0	1	0.007	0.01
METHOXYCHLOR	1	0	0	--	--	--	0.5	0.5	0	0	180	30
TOXAPHENE	1	0	0	--	--	--	**3**	**3**	0	1	0.06	3
Total Petroleum Hydrocarbons (mg/L)												
DIESEL RANGE ORGANICS	28	8	29	1	0.32J	3.8J	0.1	0.1	--	--	NA	NA
GASOLINE RANGE ORGANICS	28	11	39	3	0.051J	14	0.05	0.05	--	--	NA	NA
JP5 RANGE ORGANICS	28	0	0	--	--	--	0.1	0.1	--	--	NA	NA
MOTOR OIL RANGE ORGANICS	28	14	50	0.8	0.25J	2.37J	0.2	0.5	--	--	NA	NA
Metals (µg/L)												
Filtered												
ALUMINUM	32	5	16	454	36.5J	2,070	8.4	848	0	0	36,000	NA
ANTIMONY	32	3	9	**39.1**	5J	**104J**	2.2	**306**	1	9	15.0	6.0
ARSENIC	32	8	25	**28.6**	**5.2J**	**68.8**	**2.6**	**100**	8	24	0.045	10.0
BARIUM	32	29	91	178	30.6J	720	55.5	198	0	0	2,600	1,000
BERYLLIUM	32	4	13	2.3	1.8J	3J	0.1	22	0	0	73.0	4.0
CADMIUM	32	10	31	3.0	0.44J	10.8J	0.3	8	0	0	18.0	5.0
CALCIUM	32	32	100	222,000	27,700	712,000	0	0	--	--	NA	NA
CHROMIUM	32	10	31	6.9	3J	26.6J	0.7	32	0	0	55,000	50.0
COBALT	32	8	25	71.6	5.7J	250J	3.8	25.6	0	0	730	NA
COPPER	32	2	6	12.8	7.4J	18.1J	3.6	80	0	0	1,500	1,300
IRON	32	22	69	6,650	79.3J	**51,100**	13.4	141	4	0	11,000	NA
LEAD	32	4	13	14.9	1.1J	30.9	1	24	--	--	NA	15.0
MAGNESIUM	32	32	100	531,000	15,900	2,160,000	0	0	--	--	NA	NA
MANGANESE	32	32	100	2,740	187	**13,500**	0	0	17	0	880	NA
MERCURY	32	2	6	0.22	0.2	0.24	0.2	0.2	0	0	11.0	2.0
MOLYBDENUM	32	4	13	19.1	13.6J	25.6J	7.9	**280**	0	2	180	NA
NICKEL	32	5	16	266	17.1J	623J	7.5	40	0	0	730	100

TABLE 5-6: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Follow-on Investigation, 1994

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Metals (µg/L)												
Filtered												
POTASSIUM	32	32	100	193,000	14,100	572,000J	0	0	--	--	NA	NA
SELENIUM	32	0	0	--	--	--	2.4	54	0	0	180	50.0
SILVER	31	1	3	41.2	41.2J	41.2J	0.9	40	0	0	180	NA
SODIUM	32	32	100	4,690,000	25,900	15,800,000	0	0	--	--	NA	NA
THALLIUM	32	2	6	**43.8**	**18.4J**	**69.2J**	2.3	**76**	2	29	2.4	2.0
VANADIUM	32	9	28	13.5	7.3J	29.6J	3.7	136	0	0	260	NA
ZINC	32	5	16	688	9.3J	2,230	5.3	42.2	0	0	11,000	NA

TABLE 5-6: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Follow-on Investigation, 1994

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
BHC	Benzene Hexachloride
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethene
DDT	Dichlorodiphenyltrichloroethane
J	Estimated value
MCL	Maximum Contaminant Level
mg/L	Milligrams per liter
NA	No criteria available
PCB	Polychlorinated biphenyl
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or CAL-modified (2002)
µg/L	Micrograms per liter

TABLE 5-7: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Follow-on Investigation, 1998

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
1,1,1-TRICHLOROETHANE	31	0	0	--	--	--	0.5	25	0	0	3,200	200
1,1,2,2-TETRACHLOROETHANE	10	0	0	--	--	--	**1**	**25**	0	10	0.06	1
1,1,2-TRICHLOROETHANE	10	0	0	--	--	--	**1**	**25**	0	10	0.2	5
1,1-DICHLOROETHANE	10	0	0	--	--	--	1	**25**	0	2	2	5
1,1-DICHLOROETHENE	31	3	10	4	3.8	4.6	0.5	25	0	0	340	6
1,2,4-TRICHLOROBENZENE	8	0	0	--	--	--	1	25	0	0	190	5
1,2-DIBROMO-3-CHLOROPROPANE	6	0	0	--	--	--	**1**	**25**	0	6	0.002	0.2
1,2-DICHLOROBENZENE	8	0	0	--	--	--	1	25	0	0	370	600
1,2-DICHLOROETHANE	31	7	23	**6**	**0.7**	**17**	**0.5**	**12**	7	24	0.1	0.5
1,2-DICHLOROETHENE (TOTAL)	2	0	0	--	--	--	2	2	0	0	61	NA
1,2-DICHLOROPROPANE	10	0	0	--	--	--	**1**	**25**	0	10	0.2	5
1,3-DICHLOROBENZENE	8	0	0	--	--	--	1	**25**	0	2	6	NA
1,4-DICHLOROBENZENE	8	0	0	--	--	--	**1**	**25**	0	8	0.5	5
2-BUTANONE	3	0	0	--	--	--	2	5	--	--	NA	NA
2-HEXANONE	7	0	0	--	--	--	2	5	--	--	NA	NA
4-METHYL-2-PENTANONE	10	0	0	--	--	--	2	120	--	--	NA	NA
ACETONE	3	1	33	58	58J	58J	2	2	0	0	610	NA
BENZENE	31	6	19	**500**	**1.8**	**820**	**0.5**	**0.5**	6	25	0.3	1
BROMOCHLOROMETHANE	8	0	0	--	--	--	1	25	--	--	NA	NA
BROMODICHLOROMETHANE	10	0	0	--	--	--	**1**	**25**	0	10	0.2	80
BROMOFORM	10	0	0	--	--	--	1	**25**	0	2	9	80
BROMOMETHANE	10	0	0	--	--	--	1	**25**	0	2	9	NA
CARBON DISULFIDE	10	0	0	--	--	--	1	25	0	0	1,000	NA
CARBON TETRACHLORIDE	10	0	0	--	--	--	**0.5**	**12**	0	10	0.2	0.5
CHLOROBENZENE	10	0	0	--	--	--	1	25	0	0	110	70
CHLOROETHANE	31	0	0	--	--	--	0.5	**25**	0	2	5	NA
CHLOROFORM	10	0	0	--	--	--	**1**	**25**	0	10	0.5	80
CHLOROMETHANE	10	0	0	--	--	--	1	**25**	0	4	2	NA
CIS-1,2-DICHLOROETHENE	29	5	17	1,000	3.4	**4,400**	0.5	25	3	0	61	6
CIS-1,3-DICHLOROPROPENE	10	0	0	--	--	--	**0.5**	**12**	0	10	0.4	0.5
DIBROMOCHLOROMETHANE	10	0	0	--	--	--	**1**	**25**	0	10	0.1	80

TABLE 5-7: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Follow-on Investigation, 1998

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
ETHYLBENZENE	31	5	16	350	1.1	460J	0.5	2	4	0	3	300
ETHYLENE DIBROMIDE	8	0	0	--	--	--	1	25	--	--	NA	0.05
METHYLENE CHLORIDE	10	0	0	--	--	--	2	50	0	2	4	NA
STYRENE	10	0	0	--	--	--	1	25	0	0	1,600	100
TETRACHLOROETHENE	31	1	3	0.9	0.9	0.9	0.5	25	1	10	0.7	5
TOLUENE	31	11	35	110	0.7	650	0.5	2	0	0	720	150
TRANS-1,2-DICHLOROETHENE	29	3	10	9	3	17	0.5	25	0	0	120	10
TRANS-1,3-DICHLOROPROPENE	10	0	0	--	--	--	0.5	12	0	10	0.4	0.5
TRICHLOROETHENE	31	4	13	8,400	103	20,000	0.5	25	4	27	0.03	5
VINYL CHLORIDE	31	3	10	61	17	140	0.5	12	3	28	0.02	0.5
XYLENE (TOTAL)	31	10	32	280	0.8	1,200J	0.5	2	3	0	210	1,800
Total Petroleum Hydrocarbons (mg/L)												
DIESEL RANGE ORGANICS	8	4	50	3	1.4J	4.6J	0.1	0.12	--	--	NA	NA
GASOLINE RANGE ORGANICS	8	5	63	4	0.03J	7.2J	0.05	0.05	--	--	NA	NA
MOTOR OIL RANGE ORGANICS	8	2	25	0.6	0.51J	0.67J	0.24	2.5	--	--	NA	NA
Metals (µg/L)												
Filtered												
ALUMINUM	7	2	29	1,340	263	2,420	25.8	58.3	0	0	36,000	NA
ANTIMONY	7	1	14	2.6	2.6J	2.6J	0.65	3.4	0	0	15.0	6.0
ARSENIC	7	7	100	49.9	1.1J	103	0	0	7	0	0.045	10.0
BARIUM	7	7	100	469	142	826	0	0	0	0	2,600	1,000
BERYLLIUM	7	0	0	--	--	--	0.1	0.2	0	0	73.0	4.0
CADMIUM	7	5	71	0.68	0.15J	1.3J	0.2	0.3	0	0	18.0	5.0
CALCIUM	7	7	100	57,500	35,000	78,500	0	0	--	--	NA	NA
CHROMIUM	7	5	71	4.7	0.45J	9.9	0.23	0.8	0	0	55,000	50.0
COBALT	7	4	57	1.0	0.38J	2.7J	0.3	1.3	0	0	730	NA
COPPER	7	0	0	--	--	--	0.35	2.9	0	0	1,500	1,300
IRON	7	7	100	6,050	429	15,900J	0	0	2	0	11,000	NA
LEAD	7	3	43	14.7	6.6	21.2	0.65	3.7	--	--	NA	15.0
MAGNESIUM	7	7	100	65,700	14,500	134,000	0	0	--	--	NA	NA

TABLE 5-7: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Follow-on Investigation, 1998

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Metals (µg/L)												
Filtered												
MANGANESE	7	7	100	577	96.9	**1,420**	0	0	2	0	880	NA
MERCURY	7	0	0	--	--	--	0.1	0.1	0	0	11.0	2.0
MOLYBDENUM	7	4	57	2.8	1.6J	5	1	3	0	0	180	NA
NICKEL	7	5	71	4.7	3.1J	7.3J	2.8	3.7	0	0	730	100
POTASSIUM	7	7	100	84,600	17,500J	145,000J	0	0	--	--	NA	NA
SELENIUM	7	1	14	3.0	3J	3J	0.8	1	0	0	180	50.0
SILVER	7	2	29	0.32	0.18J	0.46J	0.15	0.7	0	0	180	NA
SODIUM	7	7	100	1,000,000	146,000	1,830,000	0	0	--	--	NA	NA
THALLIUM	7	0	0	--	--	--	1.1	1.4	0	0	2.4	2.0
VANADIUM	7	1	14	9.6	9.6J	9.6J	0.3	7.5	0	0	260	NA
ZINC	7	6	86	50.8	10.1	130	4.6	4.6	0	0	11,000	NA

TABLE 5-7: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Follow-on Investigation, 1998

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
J	Estimated value
MCL	Maximum Contaminant Level
mg/L	Milligrams per liter
NA	No criteria available
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or CAL-modified (2002)
µg/L	Micrograms per liter

TABLE 5-8: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

Supplemental Remedial Investigation Data Gap Sampling, 2001

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
1,1,1,2-TETRACHLOROETHANE	3	0	0	--	--	--	2	2	--	--	NA
1,1,1-TRICHLOROETHANE	3	0	0	--	--	--	2	2	0	0	1,200,000
1,1,2,2-TETRACHLOROETHANE	3	0	0	--	--	--	2	2	0	0	410
1,1,2-TRICHLOROETHANE	3	0	0	--	--	--	2	2	0	0	730
1,1-DICHLOROETHANE	3	0	0	--	--	--	2	2	0	0	2,800
1,1-DICHLOROETHENE	3	0	0	--	--	--	2	2	0	0	120,000
1,2-DICHLOROBENZENE	3	0	0	--	--	--	2	2	0	0	370,000
1,2-DICHLOROETHANE	3	0	0	--	--	--	2	2	0	0	280
1,3-DICHLOROBENZENE	3	0	0	--	--	--	2	2	0	0	16,000
1,4-DICHLOROBENZENE	3	0	0	--	--	--	2	2	0	0	3,400
BENZENE	3	1	33	21	21	21	2	2	0	0	600
CHLOROBENZENE	3	0	0	--	--	--	2	2	0	0	150,000
CHLOROETHANE	3	0	0	--	--	--	2	2	0	0	3,000
CHLOROMETHANE	3	0	0	--	--	--	2	2	0	0	1,200
CIS-1,2-DICHLOROETHENE	3	0	0	--	--	--	2	2	0	0	43,000
ETHYLBENZENE	3	1	33	11	11	11	2	2	0	0	8,900
M,P-XYLENE	3	1	33	32	32	32	2	2	0	0	270,000
METHYL-T-BUTYL ETHER	3	0	0	--	--	--	2	2	0	0	17,000
METHYLENE CHLORIDE	3	0	0	--	--	--	2	2	0	0	9,100
NAPHTHALENE	3	0	0	--	--	--	2	2	0	0	56,000
O-XYLENE	3	1	33	10	9.6	9.6	2	2	0	0	270,000
TETRACHLOROETHENE	3	0	0	--	--	--	2	2	0	0	1,500
TOLUENE	3	1	33	68	68	68	2	2	0	0	520,000
TRANS-1,2-DICHLOROETHENE	3	0	0	--	--	--	2	2	0	0	69,000
TRICHLOROETHENE	3	0	0	--	--	--	2	2	0	0	53
VINYL CHLORIDE	3	0	0	--	--	--	2	2	0	0	79
Total Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	4	3	75	60	14	100	12	12	--	--	NA
GASOLINE RANGE ORGANICS	3	3	100	4	1.3 J	8.3 J	0	0	--	--	NA
JP5 RANGE ORGANICS	1	0	0	--	--	--	12	12	--	--	NA

TABLE 5-8: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

Supplemental Remedial Investigation Data Gap Sampling, 2001

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Total Petroleum Hydrocarbons (mg/kg)											
MOTOR OIL RANGE ORGANICS	4	1	25	50	50	50	10	10	--	--	NA
Metals (mg/kg)											
LEAD	48	45	94	**650**	2.9	**13,700 J**	0.27	2.7	15	0	150

TABLE 5-8: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

Supplemental Remedial Investigation Data Gap Sampling, 2001
Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
J	Estimated value
mg/kg	Milligrams per kilogram
NA	No PRG available
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)
µg/kg	Micrograms per kilogram

TABLE 5-9: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Supplemental Remedial Investigation Data Gap Sampling, 2001

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
1,1,1,2-TETRACHLOROETHANE	18	0	0	--	--	--	1	200	0	18	0.4	NA
1,1,1-TRICHLOROETHANE	33	0	0	--	--	--	1	200	0	0	3,200	200
1,1,2,2-TETRACHLOROETHANE	33	0	0	--	--	--	1	200	0	33	0.06	1
1,1,2-TRICHLOROETHANE	33	1	3	8	8	8	1	200	1	32	0.2	5
1,1-DICHLOROETHANE	33	1	3	2	2J	2J	0.5	200	0	5	2	5
1,1-DICHLOROETHENE	33	1	3	1	1	1	1	200	0	0	340	6
1,2-DICHLOROBENZENE	33	0	0	--	--	--	1	200	0	0	370	600
1,2-DICHLOROETHANE	33	5	15	7	0.8	18	0.5	200	5	28	0.1	0.5
1,2-DICHLOROETHENE (TOTAL)	15	1	7	0.8	0.8J	0.8J	2	20	0	0	61	NA
1,2-DICHLOROPROPANE	15	0	0	--	--	--	2	20	0	15	0.2	5
1,3-DICHLOROBENZENE	33	0	0	--	--	--	1	200	0	6	6	NA
1,4-DICHLOROBENZENE	33	0	0	--	--	--	1	200	0	33	0.5	5
2-BUTANONE	15	0	0	--	--	--	0.7	20	--	--	NA	NA
2-HEXANONE	15	0	0	--	--	--	2	20	--	--	NA	NA
4-METHYL-2-PENTANONE	15	0	0	--	--	--	2	20	--	--	NA	NA
ACETONE	15	0	0	--	--	--	3	32	0	0	610	NA
BENZENE	33	15	45	810	0.4J	4,600	0.5	3	15	18	0.3	1
BROMODICHLOROMETHANE	15	0	0	--	--	--	2	20	0	15	0.2	80
BROMOFORM	15	0	0	--	--	--	2	20	0	4	9	80
BROMOMETHANE	15	0	0	--	--	--	2	20	0	4	9	NA
CARBON DISULFIDE	15	1	7	0.9	0.9J	0.9J	2	20	0	0	1,000	NA
CARBON TETRACHLORIDE	15	0	0	--	--	--	0.5	5	0	15	0.2	0.5
CHLOROBENZENE	33	2	6	280	1.2	560	1	200	1	1	110	70
CHLOROETHANE	33	1	3	2	1.6	1.6	1	200	0	6	5	NA
CHLOROFORM	15	0	0	--	--	--	2	20	0	15	0.5	80
CHLOROMETHANE	33	3	9	7	3.9	13	1	200	3	17	2	NA
CIS-1,2-DICHLOROETHENE	18	4	22	32	1.5	100	1	200	1	2	61	6
CIS-1,3-DICHLOROPROPENE	15	0	0	--	--	--	0.5	5	0	15	0.4	0.5
DIBROMOCHLOROMETHANE	15	0	0	--	--	--	2	20	0	15	0.1	80
ETHYLBENZENE	33	18	55	180	0.5J	2,400	1	10	8	3	3	300
M,P-XYLENE	18	15	83	750	1.4	9,600	1	1	3	0	210	NA

TABLE 5-9: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Supplemental Remedial Investigation Data Gap Sampling, 2001

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
METHYL-T-BUTYL ETHER	33	1	3	0.5	0.5J	0.5J	1	200	0	6	6	13
METHYLENE CHLORIDE	33	0	0	--	--	--	1	200	0	6	4	NA
NAPHTHALENE	18	6	33	4	1.3	7.4	1	200	2	2	6	NA
O-XYLENE	18	8	44	290	1.1	2,200	1	200	1	0	210	NA
STYRENE	15	0	0	--	--	--	2	20	0	0	1,600	100
TETRACHLOROETHENE	33	0	0	--	--	--	1	200	0	33	0.7	5
TOLUENE	33	17	52	13	1J	170	1	200	0	0	720	150
TRANS-1,2-DICHLOROETHENE	18	0	0	--	--	--	1	200	0	2	120	10
TRANS-1,3-DICHLOROPROPENE	15	0	0	--	--	--	0.5	5	0	15	0.4	0.5
TRICHLOROETHENE	33	0	0	--	--	--	1	200	0	33	0.03	5
VINYL CHLORIDE	33	2	6	3	1.7	4	0.5	200	2	31	0.02	0.5
XYLENE (TOTAL)	15	4	27	81	0.6J	320J	2	10	1	0	210	1,800
Semivolatile Organic Compounds (µg/L)												
1,2,4-TRICHLOROBENZENE	9	0	0	--	--	--	10	10	0	0	190	5
1,2-DICHLOROBENZENE	9	0	0	--	--	--	5	5	0	0	370	600
1,3-DICHLOROBENZENE	9	0	0	--	--	--	5	5	0	0	6	NA
1,4-DICHLOROBENZENE	9	0	0	--	--	--	5	5	0	9	0.5	5
2,2'-OXYBIS(1-CHLOROPROPANE)	9	0	0	--	--	--	10	10	--	--	NA	NA
2,4,5-TRICHLOROPHENOL	9	0	0	--	--	--	25	25	0	0	3,600	50
2,4,6-TRICHLOROPHENOL	7	0	0	--	--	--	10	10	0	7	1	NA
2,4-DICHLOROPHENOL	9	0	0	--	--	--	10	10	0	0	110	NA
2,4-DIMETHYLPHENOL	9	0	0	--	--	--	10	10	0	0	730	NA
2,4-DINITROPHENOL	9	0	0	--	--	--	25	50	0	0	73	NA
2,4-DINITROTOLUENE	9	0	0	--	--	--	10	10	0	0	73	NA
2,6-DINITROTOLUENE	9	0	0	--	--	--	10	10	0	0	36	NA
2-CHLORONAPHTHALENE	9	0	0	--	--	--	10	10	--	--	NA	NA
2-CHLOROPHENOL	9	0	0	--	--	--	10	10	0	0	30	NA
2-METHYLNAPHTHALENE	9	0	0	--	--	--	10	10	--	--	NA	NA
2-METHYLPHENOL	9	0	0	--	--	--	10	10	0	0	1,800	NA
2-NITROANILINE	9	0	0	--	--	--	25	25	0	9	1	NA

TABLE 5-9: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Supplemental Remedial Investigation Data Gap Sampling, 2001

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Semivolatile Organic Compounds (µg/L)												
2-NITROPHENOL	9	0	0	--	--	--	10	10	--	--	NA	NA
3,3'-DICHLOROBENZIDINE	9	0	0	--	--	--	**12**	**12**	0	9	0.2	NA
3-NITROANILINE	9	0	0	--	--	--	25	25	--	--	NA	NA
4,6-DINITRO-2-METHYLPHENOL	9	0	0	--	--	--	25	25	--	--	NA	NA
4-BROMOPHENYL-PHENYLETHER	9	0	0	--	--	--	10	10	--	--	NA	NA
4-CHLORO-3-METHYLPHENOL	9	0	0	--	--	--	10	10	--	--	NA	NA
4-CHLOROANILINE	9	0	0	--	--	--	17	19	0	0	150	NA
4-CHLOROPHENYL-PHENYLETHER	9	0	0	--	--	--	10	10	--	--	NA	NA
4-METHYLPHENOL	9	0	0	--	--	--	10	10	0	0	180	NA
4-NITROANILINE	9	0	0	--	--	--	25	25	--	--	NA	NA
4-NITROPHENOL	9	0	0	--	--	--	25	25	--	--	NA	NA
ACENAPHTHENE	9	0	0	--	--	--	10	10	0	0	370	NA
ACENAPHTHYLENE	9	0	0	--	--	--	10	10	--	--	NA	NA
ANTHRACENE	9	0	0	--	--	--	10	10	0	0	1,800	NA
BENZO(A)ANTHRACENE	9	0	0	--	--	--	**10**	**10**	0	9	0.09	0.1
BENZO(A)PYRENE	9	0	0	--	--	--	**1.4**	**2.7**	0	9	0.009	0.2
BENZO(B)FLUORANTHENE	9	0	0	--	--	--	**10**	**10**	0	9	0.09	NA
BENZO(G,H,I)PERYLENE	9	0	0	--	--	--	10	10	--	--	NA	NA
BENZO(K)FLUORANTHENE	9	0	0	--	--	--	**10**	**10**	0	9	0.06	NA
BIS(2-CHLOROETHOXY)METHANE	9	0	0	--	--	--	10	10	--	--	NA	NA
BIS(2-CHLOROETHYL)ETHER	9	0	0	--	--	--	**10**	**10**	0	9	0.01	NA
BIS(2-ETHYLHEXYL)PHTHALATE	9	0	0	--	--	--	4	4	0	0	5	NA
BUTYLBENZYLPHTHALATE	9	0	0	--	--	--	10	10	0	0	7,300	NA
CARBAZOLE	9	0	0	--	--	--	**10**	**14**	0	9	3	NA
CHRYSENE	9	0	0	--	--	--	**10**	**10**	0	9	0.6	NA
DI-N-BUTYLPHTHALATE	9	0	0	--	--	--	10	10	--	--	NA	NA
DI-N-OCTYLPHTHALATE	9	0	0	--	--	--	10	10	--	--	NA	NA
DIBENZO(A,H)ANTHRACENE	9	0	0	--	--	--	**20**	**20**	0	9	0.009	NA
DIBENZOFURAN	9	0	0	--	--	--	10	10	0	0	24	NA
DIETHYLPHTHALATE	9	0	0	--	--	--	10	10	0	0	29,000	NA
DIMETHYLPHTHALATE	9	0	0	--	--	--	10	10	0	0	360,000	NA

TABLE 5-9: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Supplemental Remedial Investigation Data Gap Sampling, 2001

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Semivolatile Organic Compounds (µg/L)												
FLUORANTHENE	9	0	0	--	--	--	10	10	0	0	1,500	NA
FLUORENE	9	0	0	--	--	--	10	10	0	0	240	NA
HEXACHLOROBENZENE	9	0	0	--	--	--	**10**	**10**	0	9	0.04	1
HEXACHLOROBUTADIENE	9	0	0	--	--	--	**10**	**10**	0	9	0.9	NA
HEXACHLOROCYCLOPENTADIENE	9	0	0	--	--	--	11	16	0	0	220	NA
HEXACHLOROETHANE	9	0	0	--	--	--	**10**	**10**	0	9	5	NA
INDENO(1,2,3-CD)PYRENE	9	0	0	--	--	--	**10**	**10**	0	9	0.09	NA
ISOPHORONE	9	0	0	--	--	--	10	10	0	0	71	NA
N-NITROSO-DI-N-PROPYLAMINE	9	0	0	--	--	--	**10**	**10**	0	9	0.01	NA
N-NITROSODIPHENYLAMINE	9	0	0	--	--	--	10	**18**	0	7	14	NA
NAPHTHALENE	9	0	0	--	--	--	**10**	**10**	0	9	6	NA
NITROBENZENE	9	0	0	--	--	--	**10**	**10**	0	9	3	NA
PENTACHLOROPHENOL	9	0	0	--	--	--	**25**	**25**	0	9	0.6	1
PHENANTHRENE	9	0	0	--	--	--	10	10	--	--	NA	NA
PHENOL	9	0	0	--	--	--	10	10	0	0	22,000	NA
PYRENE	9	0	0	--	--	--	10	10	0	0	180	NA
Polynuclear Aromatic Hydrocarbons (µg/L)												
ACENAPHTHENE	9	0	0	--	--	--	5	5	0	0	370	NA
ACENAPHTHYLENE	9	1	11	2	2	2	2	2	--	--	NA	NA
ANTHRACENE	9	0	0	--	--	--	0.2	0.2	0	0	1,800	NA
BENZO(A)ANTHRACENE	9	3	33	**0.1**	**0.1J**	**0.1J**	**0.2**	**0.2**	3	6	0.09	0.1
BENZO(A)PYRENE	9	2	22	**0.1**	**0.1J**	**0.1J**	**0.2**	**0.2**	2	7	0.009	0.2
BENZO(B)FLUORANTHENE	9	0	0	--	--	--	**0.2**	**0.2**	0	9	0.09	NA
BENZO(G,H,I)PERYLENE	9	0	0	--	--	--	0.2	0.2	--	--	NA	NA
BENZO(K)FLUORANTHENE	9	0	0	--	--	--	**0.2**	**0.2**	0	9	0.06	NA
CHRYSENE	9	0	0	--	--	--	0.2	0.2	0	0	0.6	NA
DIBENZO(A,H)ANTHRACENE	9	0	0	--	--	--	**0.5**	**0.5**	0	9	0.009	NA
FLUORANTHENE	9	3	33	0.5	0.2J	0.93	0.2	0.2	0	0	1,500	NA
FLUORENE	9	0	0	--	--	--	1	1	0	0	240	NA
INDENO(1,2,3-CD)PYRENE	9	0	0	--	--	--	**0.2**	**0.2**	0	9	0.09	NA

TABLE 5-9: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Supplemental Remedial Investigation Data Gap Sampling, 2001

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of *Detected* Concentration	Minimum *Detected* Concentration	Maximum *Detected* Concentration	Minimum *Non-detected* Concentration	Maximum *Non-detected* Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Polynuclear Aromatic Hydrocarbons (µg/L)												
NAPHTHALENE	9	0	0	--	--	--	5	5	0	0	6	NA
PHENANTHRENE	9	0	0	--	--	--	1	1	--	--	NA	NA
PYRENE	9	5	56	0.3	0.2J	0.42	0.2	0.2	0	0	180	NA
Total Petroleum Hydrocarbons (mg/L)												
DIESEL RANGE ORGANICS	13	7	54	0.5	0.1J	1.1	0.1	0.2	--	--	NA	NA
GASOLINE RANGE ORGANICS	30	22	73	63	0.06	1,000J	0.05	0.05	--	--	NA	NA
JP5 RANGE ORGANICS	10	1	10	1	1.1J	1.1J	0.1	0.1	--	--	NA	NA
MOTOR OIL RANGE ORGANICS	13	2	15	0.2	0.07J	0.39	0.1	0.2	--	--	NA	NA
Metals (µg/L)												
Filtered												
LEAD	16	8	50	115	4.2	210	0.65	8.9	--	--	NA	15.0

TABLE 5-9: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Supplemental Remedial Investigation Data Gap Sampling, 2001

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
J	Estimated value
MCL	Maximum Contaminant Level
mg/L	Milligrams per liter
NA	No criteria available
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)
µg/L	Micrograms per liter

TABLE 5-10: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

DNAPL Removal Action, 2002

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
1,1,1-TRICHLOROETHANE	105	1	1	590	590	590	250	1,000	0	0	3,200	200
1,1,2-TRICHLOROETHANE	105	0	0	--	--	--	250	1,000	0	105	0.2	5
1,1-DICHLOROETHANE	105	0	0	--	--	--	250	1,000	0	105	2	5
1,1-DICHLOROETHENE	105	0	0	--	--	--	250	1,000	0	17	340	6
1,2-DICHLOROETHANE	105	0	0	--	--	--	250	1,000	0	105	0.1	0.5
CIS-1,2-DICHLOROETHENE	105	24	23	950	220	5,700	250	1,000	24	81	61	6
TETRACHLOROETHENE	105	0	0	--	--	--	250	1,000	0	105	0.7	5
TRANS-1,2-DICHLOROETHENE	105	0	0	--	--	--	250	1,000	0	105	120	10
TRICHLOROETHENE	105	65	62	7,300	260	28,000	250	500	65	40	0.03	5
VINYL CHLORIDE	105	2	2	250	240	250	250	1,000	2	103	0.02	0.5

TABLE 5-10: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

DNAPL Removal Action, 2002

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

-- Not detected

MCL Maximum Contaminant Level

NA No criteria available

PRG Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)

µg/L Micrograms per liter

TABLE 5-11: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Basewide Groundwater Monitoring, 2002 and 2003

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
1,1,1,2-TETRACHLOROETHANE	15	0	0	--	--	--	**0.5**	**1.7**	0	15	0.4	NA
1,1,1-TRICHLOROETHANE	15	0	0	--	--	--	0.5	1.7	0	0	3,200	200
1,1,2,2-TETRACHLOROETHANE	15	0	0	--	--	--	**0.5**	**1.7**	0	15	0.06	1
1,1,2-TRICHLOROETHANE	15	0	0	--	--	--	**0.5**	**1.7**	0	15	0.2	5
1,1-DICHLOROETHANE	15	0	0	--	--	--	0.5	1.7	0	0	2	5
1,1-DICHLOROETHENE	15	0	0	--	--	--	0.5	1.7	0	0	340	6
1,1-DICHLOROPROPENE	15	0	0	--	--	--	0.5	1.7	--	--	NA	NA
1,2,3-TRICHLOROBENZENE	15	0	0	--	--	--	0.5	1.7	--	--	NA	NA
1,2,3-TRICHLOROPROPANE	15	0	0	--	--	--	**0.5**	**1.7**	0	15	0.006	NA
1,2,4-TRICHLOROBENZENE	15	0	0	--	--	--	0.5	1.7	0	0	190	5
1,2,4-TRIMETHYLBENZENE	15	6	40	12	0.2J	**46**	0.5	0.5	2	0	12	NA
1,2-DIBROMO-3-CHLOROPROPANE	15	0	0	--	--	--	**0.5**	**1.7**	0	15	0.002	0.2
1,2-DICHLOROBENZENE	15	0	0	--	--	--	0.5	1.7	0	0	370	600
1,2-DICHLOROETHANE	15	0	0	--	--	--	**0.5**	**1.7**	0	15	0.1	0.5
1,2-DICHLOROPROPANE	15	0	0	--	--	--	**0.5**	**1.7**	0	15	0.2	5
1,3,5-TRIMETHYLBENZENE	15	5	33	7	0.2	**20**	0.4	1.7	1	0	12	NA
1,3-DICHLOROBENZENE	15	0	0	--	--	--	0.5	1.7	0	0	6	NA
1,3-DICHLOROPROPANE	15	0	0	--	--	--	0.5	1.7	--	--	NA	NA
1,4-DICHLOROBENZENE	15	0	0	--	--	--	0.5	**1.7**	0	4	0.5	5
2,2-DICHLOROPROPANE	15	0	0	--	--	--	0.5	1.7	--	--	NA	NA
2-BUTANONE	15	1	7	9	8.6J	8.6J	10	33	--	--	NA	NA
2-CHLOROTOLUENE	15	0	0	--	--	--	0.5	1.7	--	--	NA	NA
2-HEXANONE	15	0	0	--	--	--	10	33	--	--	NA	NA
4-CHLOROTOLUENE	15	0	0	--	--	--	0.5	1.7	--	--	NA	NA
4-METHYL-2-PENTANONE	15	3	20	20	9.1	29J	10	33	--	--	NA	NA
ACETONE	15	5	33	230	6.2	600J	0.6	10	0	0	610	NA
BENZENE	15	8	53	**160**	**0.6J**	**550**	**0.5**	**0.5**	8	7	0.3	1
BROMOBENZENE	15	0	0	--	--	--	0.5	1.7	0	0	20	NA
BROMOCHLOROMETHANE	15	0	0	--	--	--	0.5	1.7	--	--	NA	NA
BROMODICHLOROMETHANE	15	0	0	--	--	--	**0.5**	**1.7**	0	15	0.2	80
BROMOFORM	15	0	0	--	--	--	1	3.3	0	0	9	80

TABLE 5-11: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Basewide Groundwater Monitoring, 2002 and 2003

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
BROMOMETHANE	15	0	0	--	--	--	1	3.3	0	0	9	NA
CARBON DISULFIDE	15	3	20	0.7	0.2	1.2J	0.5	1.7	0	0	1,000	NA
CARBON TETRACHLORIDE	15	0	0	--	--	--	**0.5**	**1.7**	0	15	0.2	*0.5*
CHLOROBENZENE	15	0	0	--	--	--	0.5	1.7	0	0	110	70
CHLOROETHANE	15	0	0	--	--	--	1	3.3	0	0	5	NA
CHLOROFORM	15	1	7	0.1	0.1J	0.1J	0.5	**1.7**	0	4	0.5	80
CHLOROMETHANE	15	0	0	--	--	--	1	**3.3**	0	4	2	NA
CIS-1,2-DICHLOROETHENE	15	1	7	0.3	0.3J	0.3J	0.5	1.7	0	0	61	6
DIBROMOCHLOROMETHANE	15	0	0	--	--	--	**0.5**	**1.7**	0	15	0.1	80
DIBROMOMETHANE	15	0	0	--	--	--	0.5	1.7	--	--	NA	NA
DICHLORODIFLUOROMETHANE	15	0	0	--	--	--	1	3.3	0	0	390	NA
DIISOPROPYL ETHER	15	0	0	--	--	--	0.5	1.7	--	--	NA	NA
ETHYL TERT-BUTYL ETHER	15	0	0	--	--	--	0.5	1.7	--	--	NA	NA
ETHYLBENZENE	15	9	60	**28**	0.5J	**150**	0.2	0.5	5	0	3	300
ETHYLENE DIBROMIDE	15	0	0	--	--	--	0.5	1.7	--	--	NA	0.05
HEXACHLOROBUTADIENE	15	0	0	--	--	--	0.5	**1.7**	0	4	0.9	NA
ISOPROPYLBENZENE	15	5	33	2	0.5J	5.5	0.5	1.7	--	--	NA	NA
M,P-XYLENE	15	6	40	91	1.2J	**470**	0.5	0.5	1	0	210	NA
METHYL-T-BUTYL ETHER	15	1	7	0.1	0.1J	0.1J	0.1	1.7	0	0	6	13
METHYLENE CHLORIDE	15	0	0	--	--	--	0.2	**17**	0	10	4	NA
N-BUTYLBENZENE	15	3	20	1	0.6	2.4	0.4	1.7	--	--	NA	NA
N-PROPYLBENZENE	15	6	40	7	1.5	18	0.5	1.7	0	0	240	NA
NAPHTHALENE	15	5	33	4	1.6	5.6J	2	2	0	0	6	NA
O-XYLENE	15	6	40	5	0.4J	22	0.5	0.5	0	0	210	NA
P-ISOPROPYLTOLUENE	15	1	7	0.8	0.8J	0.8J	0.5	1.7	--	--	NA	NA
SEC-BUTYLBENZENE	15	3	20	0.3	0.1J	0.5	0.5	1.7	0	0	240	NA
STYRENE	15	0	0	--	--	--	0.5	1.7	0	0	1,600	100
TERT-AMYL METHYL ETHER	15	0	0	--	--	--	0.5	1.7	--	--	NA	NA
TERT-BUTANOL	15	6	40	220	5.8	500	10	67	--	--	NA	NA
TERT-BUTYLBENZENE	15	0	0	--	--	--	0.5	1.7	0	0	240	NA
TETRACHLOROETHENE	15	1	7	**1**	1.2J	1.2J	0.5	**1.7**	1	3	0.7	5

TABLE 5-11: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Basewide Groundwater Monitoring, 2002 and 2003

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
TOLUENE	15	5	33	3	0.2	11	0.5	1.7	0	0	720	150
TRANS-1,2-DICHLOROETHENE	15	0	0	--	--	--	0.5	1.7	0	0	120	10
TRICHLOROETHENE	15	3	20	**0.5**	**0.2**	**1**	**0.5**	**1.7**	3	12	0.03	5
TRICHLOROFLUOROMETHANE	15	0	0	--	--	--	1	3.3	--	--	NA	NA
VINYL CHLORIDE	15	0	0	--	--	--	**0.5**	**1.7**	0	15	0.02	0.5
Total Petroleum Hydrocarbons (mg/L)												
DIESEL RANGE ORGANICS	15	1	7	0.03	0.032	0.032	0.05	0.05	--	--	NA	NA
GASOLINE RANGE ORGANICS	15	9	60	1	0.1	4.5	0.016	0.054	--	--	NA	NA
JP5 RANGE ORGANICS	15	1	7	0.1	0.096	0.096	0.05	0.05	--	--	NA	NA
MOTOR OIL RANGE ORGANICS	15	1	7	0.2	0.22	0.22	0.3	0.3	--	--	NA	NA
Metals (µg/L)												
Filtered												
ALUMINUM	13	11	85	170	5.6	1,100	5.2	7.2	0	0	36,000	NA
ANTIMONY	13	11	85	0.50	0.15J	1.4	0.2	**50**	0	1	15.0	6.0
ARSENIC	13	11	85	**20.4**	**4.4J**	**83**	**5**	**5**	11	2	0.045	10.0
BARIUM	13	11	85	239	63	880J	80	140	0	0	2,600	1,000
BERYLLIUM	13	4	31	0.061	0.023	0.11	2	2	0	0	73.0	4.0
CADMIUM	13	3	23	0.98	0.055J	2.8J	5	5	0	0	18.0	5.0
CALCIUM	13	13	100	213,000	39,000	660,000	0	0	--	--	NA	NA
CHROMIUM	13	6	46	8.9	0.67J	39	0.58	10	0	0	55,000	50.0
COBALT	13	13	100	11.0	0.24J	41	0	0	0	0	730	NA
COPPER	13	13	100	4.0	0.079	12	0	0	0	0	1,500	1,300
IRON	13	13	100	4,790	230	**28,000**	0	0	1	0	11,000	NA
LEAD	13	6	46	13.7	0.18J	58	0.023	0.5	--	--	NA	15.0
MAGNESIUM	13	13	100	438,000	18,000	1,500,000	0	0	--	--	NA	NA
MANGANESE	13	13	100	3,060	170	**16,000**	0	0	4	0	880	NA
MERCURY	13	0	0	--	--	--	0.054	0.2	0	0	11.0	2.0
MOLYBDENUM	13	8	62	2.0	0.74J	3J	1.1	4.1	0	0	180	NA
NICKEL	13	12	92	22.5	1.6J	100	55	55	0	0	730	100
POTASSIUM	13	13	100	121,000	12,000	370,000	0	0	--	--	NA	NA

TABLE 5-11: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Basewide Groundwater Monitoring, 2002 and 2003

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Metals (µg/L)												
Filtered												
SELENIUM	11	8	73	20.2	1.9J	65	5	5	0	0	180	50.0
SILVER	13	1	8	1.7	1.7J	1.7J	0.079	5	0	0	180	NA
SODIUM	13	13	100	3,610,000	29,000	12,000,000	0	0	--	--	NA	NA
THALLIUM	13	2	15	**3.4**	1.8J	***5***	0.023	**3.9**	1	1	2.4	2.0
VANADIUM	13	9	69	6.7	0.72	43	1.3	10	0	0	260	NA
ZINC	13	5	38	14.7	1.4J	46J	20	20	0	0	11,000	NA

TABLE 5-11: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Basewide Groundwater Monitoring, 2002 and 2003
Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
J	Estimated value
MCL	Maximum Contaminant Level
mg/L	Milligrams per liter
NA	No criteria available
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or CAL-modified (2002)
µg/L	Micrograms per liter

TABLE 5-12: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

Basewide Polynuclear Aromatic Hydrocarbon Investigation, 2003

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Polynuclear Aromatic Hydrocarbons (µg/kg)											
2-METHYLNAPHTHALENE	206	143	69	79	0.22J	10,000 J	5	100	--	--	NA
ACENAPHTHENE	206	109	53	120	0.28J	9,100 J	5	100	0	0	3,700,000
ACENAPHTHYLENE	203	146	72	10	0.23J	390 J	5	100	--	--	NA
ANTHRACENE	206	161	78	180	0.21J	17,000	5	100	0	0	22,000,000
BENZ(A)ANTHRACENE	206	186	90	250	0.2J	16,000	5	100	--	--	NA
BENZO(A)PYRENE	206	192	93	**260**	0.28J	**14,000**	5	**100**	76	2	62
BENZO(B)FLUORANTHENE	206	192	93	240	0.31J	**14,000**	5	100	5	0	620
BENZO(G,H,I)PERYLENE	206	197	96	170	0.3J	5,600	5	28	--	--	NA
BENZO(K)FLUORANTHENE	206	173	84	180	0.24J	**10,000**	5	100	7	0	380
CHRYSENE	206	188	91	270	0.25J	**16,000**	5	100	3	0	3,800
DIBENZ(A,H)ANTHRACENE	206	154	75	35	0.27J	1,400 J	5	100	--	--	NA
FLUORANTHENE	206	184	89	610	0.5J	38,000	5	100	0	0	2,300,000
FLUORENE	205	131	64	150	0.19J	14,000 J	5	100	0	0	2,700,000
INDENO(1,2,3-CD)PYRENE	206	181	88	190	0.34J	**5,900**	5	100	7	0	620
NAPHTHALENE	206	171	83	90	0.26J	13,000 J	5	100	0	0	56,000
PHENANTHRENE	206	178	86	560	0.34J	48,000 J	5	100	--	--	NA
PYRENE	206	192	93	540	0.93J	34,000	5	29	0	0	2,300,000

TABLE 5-12: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

Basewide Polynuclear Aromatic Hydrocarbon Investigation, 2003
Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG
J Estimated value
NA No PRG available
PRG Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)
µg/kg Micrograms per kilogram

TABLE 5-13: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
1,1,1-TRICHLOROETHANE	21	0	0	--	--	--	5	400	0	0	1,200,000
1,1,2,2-TETRACHLOROETHANE	15	0	0	--	--	--	5	12	0	0	410
1,1,2-TRICHLOROETHANE	15	0	0	--	--	--	5	12	0	0	730
1,1-DICHLOROETHANE	15	0	0	--	--	--	5	12	0	0	2,800
1,1-DICHLOROETHENE	21	0	0	--	--	--	5	400	0	0	120,000
1,2-DICHLOROETHANE	21	0	0	--	--	--	5	**400**	0	1	280
1,2-DICHLOROETHENE (TOTAL)	4	0	0	--	--	--	11	12	0	0	43,000
1,2-DICHLOROPROPANE	15	0	0	--	--	--	5	12	0	0	340
2-BUTANONE	21	0	0	--	--	--	10	400	--	--	NA
2-HEXANONE	15	0	0	--	--	--	5	18	--	--	NA
4-METHYL-2-PENTANONE	15	2	13	26	7J	45	12	18	--	--	NA
ACETONE	15	3	20	550	66	1,500 J	12	220	0	0	1,600,000
BENZENE	21	5	24	2,600	5.5J	**12,000**	5	**2,000**	2	1	600
BROMODICHLOROMETHANE	15	0	0	--	--	--	5	12	0	0	820
BROMOFORM	15	0	0	--	--	--	5	12	0	0	62,000
BROMOMETHANE	15	0	0	--	--	--	11	18	0	0	3,900
CARBON DISULFIDE	15	2	13	12	11	12	5	12	0	0	360,000
CARBON TETRACHLORIDE	15	0	0	--	--	--	5	12	0	0	250
CHLOROBENZENE	15	0	0	--	--	--	5	12	0	0	150,000
CHLOROETHANE	15	0	0	--	--	--	11	18	0	0	3,000
CHLOROFORM	15	0	0	--	--	--	5	12	0	0	940
CHLOROMETHANE	15	0	0	--	--	--	11	18	0	0	1,200
CIS-1,2-DICHLOROETHENE	17	0	0	--	--	--	5	400	0	0	43,000
CIS-1,3-DICHLOROPROPENE	15	0	0	--	--	--	5	12	0	0	780
DIBROMOCHLOROMETHANE	15	0	0	--	--	--	5	12	0	0	1,100
ETHYLBENZENE	21	7	33	1,900	11	7,900	5	12	0	0	8,900
HEXANE	17	1	6	14,000	14,000	14,000	5	20	0	0	110,000
M,P-XYLENE	6	2	33	2,200	400	4,000	20	4,000	0	0	270,000
METHYLENE CHLORIDE	21	4	19	55	32	94	10	400	0	0	9,100
O-XYLENE	17	2	12	2,200	400	4,000	5	2,000	0	0	270,000
STYRENE	15	0	0	--	--	--	5	12	0	0	1,700,000

TABLE 5-13: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
TETRACHLOROETHENE	21	0	0	--	--	--	5	400	0	0	1,500
TOLUENE	21	1	5	18,000	18,000	18,000	5	12	0	0	520,000
TRANS-1,2-DICHLOROETHENE	17	0	0	--	--	--	5	400	0	0	69,000
TRANS-1,3-DICHLOROPROPENE	15	0	0	--	--	--	5	12	0	0	780
TRICHLOROETHENE	21	0	0	--	--	--	5	**400**	0	1	53
TRICHLOROFLUOROMETHANE	11	0	0	--	--	--	5	8.8	0	0	390,000
VINYL ACETATE	11	0	0	--	--	--	54	88	0	0	430,000
VINYL CHLORIDE	21	0	0	--	--	--	10	**400**	0	1	79
XYLENE (TOTAL)	15	1	7	9	9 J	9 J	5	12	0	0	270,000
Semivolatile Organic Compounds (µg/kg)											
1,2,4-TRICHLOROBENZENE	48	0	0	--	--	--	350	9,000	0	0	650,000
1,2-DICHLOROBENZENE	48	0	0	--	--	--	350	9,000	0	0	370,000
1,3-DICHLOROBENZENE	48	0	0	--	--	--	350	9,000	0	0	16,000
1,4-DICHLOROBENZENE	48	0	0	--	--	--	350	**9,000**	0	3	3,400
2,2'-OXYBIS(1-CHLOROPROPANE)	46	0	0	--	--	--	350	9,000	--	--	NA
2,4,5-TRICHLOROPHENOL	48	0	0	--	--	--	840	45,000	0	0	6,100,000
2,4,6-TRICHLOROPHENOL	48	0	0	--	--	--	350	**9,000**	0	2	6,900
2,4-DICHLOROPHENOL	48	0	0	--	--	--	350	9,000	0	0	180,000
2,4-DIMETHYLPHENOL	48	1	2	43	43 J	43 J	350	9,000	0	0	1,200,000
2,4-DINITROPHENOL	47	0	0	--	--	--	840	45,000	0	0	120,000
2,4-DINITROTOLUENE	48	0	0	--	--	--	350	9,000	0	0	120,000
2,6-DINITROTOLUENE	48	0	0	--	--	--	350	9,000	0	0	61,000
2-CHLORONAPHTHALENE	48	0	0	--	--	--	350	9,000	--	--	NA
2-CHLOROPHENOL	48	0	0	--	--	--	350	9,000	0	0	63,000
2-METHYLPHENOL	48	0	0	--	--	--	350	9,000	--	--	NA
2-NITROANILINE	48	0	0	--	--	--	840	**45,000**	0	24	1,700
2-NITROPHENOL	48	0	0	--	--	--	350	45,000	--	--	NA
3,3'-DICHLOROBENZIDINE	48	0	0	--	--	--	350	**45,000**	0	24	1,100
3-NITROANILINE	48	0	0	--	--	--	840	45,000	--	--	NA
4,6-DINITRO-2-METHYLPHENOL	48	0	0	--	--	--	840	45,000	--	--	NA

TABLE 5-13: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Semivolatile Organic Compounds (µg/kg)											
4-BROMOPHENYL-PHENYLETHER	48	0	0	--	--	--	350	9,000	--	--	NA
4-CHLORO-3-METHYLPHENOL	48	0	0	--	--	--	350	9,000	--	--	NA
4-CHLOROANILINE	48	0	0	--	--	--	350	9,000	0	0	240,000
4-CHLOROPHENYL-PHENYLETHER	48	0	0	--	--	--	350	9,000	--	--	NA
4-METHYLPHENOL	48	0	0	--	--	--	350	9,000	0	0	310,000
4-NITROANILINE	48	0	0	--	--	--	840	45,000	--	--	NA
4-NITROPHENOL	48	0	0	--	--	--	840	45,000	--	--	NA
ANILINE	23	0	0	--	--	--	350	9,000	0	0	85,000
AZOBENZENE	23	0	0	--	--	--	350	**9,000**	0	2	4,400
BENZIDINE	23	0	0	--	--	--	**350**	**9,000**	0	23	2
BENZYL ALCOHOL	23	0	0	--	--	--	350	9,000	0	0	18,000,000
BIS(2-CHLOROETHOXY)METHANE	48	0	0	--	--	--	350	9,000	--	--	NA
BIS(2-CHLOROETHYL)ETHER	48	0	0	--	--	--	**350**	**9,000**	0	48	210
BIS(2-ETHYLHEXYL)PHTHALATE	48	8	17	59	19 J	160 J	350	9,000	0	0	35,000
BUTYLBENZYLPHTHALATE	48	0	0	--	--	--	350	9,000	0	0	12,000,000
CARBAZOLE	25	2	8	94	27 J	160 J	350	4,000	0	0	24,000
DI-N-BUTYLPHTHALATE	48	7	15	77	30 J	130 J	350	9,000	--	--	NA
DI-N-OCTYLPHTHALATE	48	1	2	94	94 J	94 J	350	9,000	--	--	NA
DIBENZOFURAN	48	3	6	480	32 J	1,200 J	350	9,000	0	0	290,000
DIETHYLPHTHALATE	48	1	2	22	22 J	22 J	350	9,000	0	0	49,000,000
DIMETHYLPHTHALATE	48	0	0	--	--	--	350	9,000	0	0	100,000,000
HEXACHLOROBENZENE	48	0	0	--	--	--	**350**	**9,000**	0	48	300
HEXACHLOROBUTADIENE	48	0	0	--	--	--	350	**9,000**	0	2	6,200
HEXACHLOROCYCLOPENTADIENE	48	0	0	--	--	--	350	9,000	0	0	370,000
HEXACHLOROETHANE	48	0	0	--	--	--	350	9,000	0	0	35,000
ISOPHORONE	48	0	0	--	--	--	350	9,000	0	0	510,000
N-NITROSO-DI-N-PROPYLAMINE	48	0	0	--	--	--	**350**	**9,000**	0	48	69
N-NITROSODIMETHYLAMINE	23	0	0	--	--	--	**350**	**9,000**	0	23	10
N-NITROSODIPHENYLAMINE	48	2	4	290	27 J	550 J	350	9,000	0	0	99,000
NITROBENZENE	48	0	0	--	--	--	350	9,000	0	0	20,000
PENTACHLOROPHENOL	48	0	0	--	--	--	840	**45,000**	0	12	3,000

TABLE 5-13: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Semivolatile Organic Compounds (µg/kg)											
PHENOL	48	0	0	--	--	--	350	9,000	0	0	37,000,000
PCBs/Pesticides (µg/kg)											
4,4'-DDD	28	0	0	--	--	--	3.4	69	0	0	2,400
4,4'-DDE	28	0	0	--	--	--	3.4	140	0	0	1,700
4,4'-DDT	28	2	7	11	7.4J	15	3.4	13	0	0	1,700
ALDRIN	28	0	0	--	--	--	1.8	10	0	0	29
ALPHA-BHC	28	0	0	--	--	--	1.8	50	--	--	NA
ALPHA-CHLORDANE	21	1	5	2	1.9J	1.9 J	1.8	2.5	0	0	1,600
AROCLOR-1016	30	0	0	--	--	--	13	49	0	0	3,900
AROCLOR-1221	30	0	0	--	--	--	25	100	0	0	220
AROCLOR-1232	30	0	0	--	--	--	13	49	0	0	220
AROCLOR-1242	30	0	0	--	--	--	13	49	0	0	220
AROCLOR-1248	30	0	0	--	--	--	13	49	0	0	220
AROCLOR-1254	30	0	0	--	--	--	13	49	0	0	220
AROCLOR-1260	30	6	20	**900**	9.5J	**5,200**	13	49	1	0	220
BETA-BHC	28	0	0	--	--	--	1.8	7.1	--	--	NA
CHLORDANE	7	1	14	180	180	180	31	67	0	0	1,600
DELTA-BHC	28	0	0	--	--	--	1.8	36	--	--	NA
DIELDRIN	28	0	0	--	--	--	3.4	**110**	0	1	30
ENDOSULFAN I	28	0	0	--	--	--	1.8	200	0	0	370,000
ENDOSULFAN II	28	0	0	--	--	--	3.4	1,500	0	0	370,000
ENDOSULFAN SULFATE	28	0	0	--	--	--	3.4	14	--	--	NA
ENDRIN	28	0	0	--	--	--	3.4	560	0	0	18,000
ENDRIN ALDEHYDE	28	0	0	--	--	--	3.4	180	--	--	NA
ENDRIN KETONE	21	0	0	--	--	--	3.4	4.9	--	--	NA
GAMMA-BHC (LINDANE)	28	1	4	2	1.9J	1.9 J	1.8	77	--	--	NA
GAMMA-CHLORDANE	21	1	5	2	2J	2 J	1.8	2.5	0	0	1,600
HEPTACHLOR	28	0	0	--	--	--	1.8	**130**	0	2	110
HEPTACHLOR EPOXIDE	28	0	0	--	--	--	1.8	35	0	0	53
METHOXYCHLOR	28	0	0	--	--	--	18	71	0	0	310,000

TABLE 5-13: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
PCBs/Pesticides (µg/kg)											
TOXAPHENE	28	0	0	--	--	--	63	250	0	0	440
Total Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	50	25	50	74	2	380	1	50	--	--	NA
GASOLINE RANGE ORGANICS	49	18	37	270	0.7 J	2,200 J	0.5	50	--	--	NA
MOTOR OIL RANGE ORGANICS	45	32	71	410	30	1,600	21	57	--	--	NA
Metals (mg/kg)											
ALUMINUM	21	21	100	10,700	3,130	28,100	0	0	0	0	76,000
ANTIMONY	27	1	4	5.0	5 J	5 J	0.46	25	0	0	31.0
ARSENIC	21	10	48	**8.3**	**0.96**	**31.5**	**1.1**	**4.5**	10	11	0.39
BARIUM	21	21	100	94.7	15.4	436	0	0	0	0	5,400
BERYLLIUM	27	7	26	0.52	0.28	0.94	0.13	25	0	0	150
CADMIUM	27	3	11	0.51	0.06	1.2	0.06	25	0	0	37.0
CALCIUM	21	21	100	9,220	1,280	110,000	0	0	--	--	NA
CHROMIUM	27	22	81	34.3	7	99	25	25	0	0	210
COBALT	21	21	100	7.2	3.6	13.5	0	0	0	0	900
COPPER	27	20	74	53.2	6.5 J	243	3.4	25	0	0	3,100
IRON	21	21	100	20,600	6,210	**39,700**	0	0	8	0	23,000
LEAD	29	21	72	71.9	1.4	**613**	0.17	25	2	0	150
MAGNESIUM	21	21	100	4,920	1,760	11,500	0	0	--	--	NA
MANGANESE	21	21	100	273	72.7	891	0	0	0	0	1,800
MERCURY	27	11	41	0.76	0.07	3.1	0.05	**25**	0	6	23.0
MOLYBDENUM	21	0	0	--	--	--	1.5	2.4	0	0	390
NICKEL	27	26	96	32.3	3.9	76.3	25	25	0	0	1,600
POTASSIUM	21	21	100	1,270	511	4,840	0	0	--	--	NA
SELENIUM	21	0	0	--	--	--	0.54	1.9	0	0	390
SILVER	27	2	7	0.35	0.24 J	0.45	0.19	25	0	0	390
SODIUM	21	21	100	438	66.3 J	2,030	0	0	--	--	NA
THALLIUM	21	8	38	3.3	1.1	4.6	0.11	0.8	0	0	5.2
VANADIUM	21	21	100	31.9	14	74.5	0	0	0	0	550

TABLE 5-13: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Metals (mg/kg)											
ZINC	27	24	89	112	15.3	717	25	25	0	0	23,000

TABLE 5-13: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
BHC	Benzene Hexachloride
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethene
DDT	Dichlorodiphenyltrichloroethane
J	Estimated value
mg/kg	Milligrams per kilogram
NA	No PRG available
PCB	Polychlorinated biphenyl
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)
µg/kg	Micrograms per kilogram

TABLE 5-14: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
1,1,1,2-TETRACHLOROETHANE	2	0	0	--	--	--	1	1	0	2	0.4	NA
1,1,1-TRICHLOROETHANE	2	0	0	--	--	--	1	1	0	0	3,200	200
1,1,2,2-TETRACHLOROETHANE	2	0	0	--	--	--	1	1	0	2	0.06	1
1,1,2-TRICHLOROETHANE	2	0	0	--	--	--	1	1	0	2	0.2	5
1,1-DICHLOROETHANE	2	0	0	--	--	--	1	1	0	0	2	5
1,1-DICHLOROETHENE	2	0	0	--	--	--	1	1	0	0	340	6
1,1-DICHLOROPROPENE	2	0	0	--	--	--	1	1	--	--	NA	NA
1,2,3-TRICHLOROBENZENE	2	0	0	--	--	--	1	1	--	--	NA	NA
1,2,3-TRICHLOROPROPANE	2	0	0	--	--	--	1	1	0	2	0.006	NA
1,2,4-TRICHLOROBENZENE	2	0	0	--	--	--	1	1	0	0	190	5
1,2,4-TRIMETHYLBENZENE	2	0	0	--	--	--	1	1	0	0	12	NA
1,2-DIBROMO-3-CHLOROPROPANE	2	0	0	--	--	--	1	1	0	2	0.002	0.2
1,2-DICHLOROBENZENE	2	0	0	--	--	--	1	1	0	0	370	600
1,2-DICHLOROETHANE	2	0	0	--	--	--	1	1	0	2	0.1	0.5
1,2-DICHLOROPROPANE	2	0	0	--	--	--	1	1	0	2	0.2	5
1,3,5-TRIMETHYLBENZENE	2	0	0	--	--	--	1	1	0	0	12	NA
1,3-DICHLOROBENZENE	2	0	0	--	--	--	1	1	0	0	6	NA
1,3-DICHLOROPROPANE	2	0	0	--	--	--	1	1	--	--	NA	NA
1,4-DICHLOROBENZENE	2	0	0	--	--	--	1	1	0	2	0.5	5
2,2-DICHLOROPROPANE	2	0	0	--	--	--	1	1	--	--	NA	NA
2-CHLOROTOLUENE	2	0	0	--	--	--	1	1	--	--	NA	NA
4-CHLOROTOLUENE	2	0	0	--	--	--	1	1	--	--	NA	NA
BENZENE	2	0	0	--	--	--	1	1	0	2	0.3	1
BROMOBENZENE	2	0	0	--	--	--	1	1	0	0	20	NA
BROMOCHLOROMETHANE	2	0	0	--	--	--	1	1	--	--	NA	NA
BROMODICHLOROMETHANE	2	0	0	--	--	--	1	1	0	2	0.2	80
BROMOFORM	2	0	0	--	--	--	1	1	0	0	9	80
BROMOMETHANE	2	0	0	--	--	--	1	1.3	0	0	9	NA
CARBON TETRACHLORIDE	2	0	0	--	--	--	1	1	0	2	0.2	0.5
CHLOROBENZENE	2	0	0	--	--	--	1	1	0	0	110	70
CHLOROETHANE	2	0	0	--	--	--	1	1	0	0	5	NA

TABLE 5-14: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
CHLOROFORM	2	0	0	--	--	--	1	1	0	2	0.5	80
CHLOROMETHANE	2	0	0	--	--	--	1	1	0	0	2	NA
CIS-1,2-DICHLOROETHENE	2	1	50	0.9	0.9J	0.9J	1	1	0	0	61	6
CIS-1,3-DICHLOROPROPENE	2	0	0	--	--	--	1	1	0	2	0.4	0.5
DIBROMOCHLOROMETHANE	2	0	0	--	--	--	1	1	0	2	0.1	80
DIBROMOMETHANE	2	0	0	--	--	--	1	1	--	--	NA	NA
DICHLORODIFLUOROMETHANE	2	0	0	--	--	--	1	1	0	0	390	NA
ETHYLBENZENE	2	0	0	--	--	--	1	1	0	0	3	300
ETHYLENE DIBROMIDE	2	0	0	--	--	--	1	1	--	--	NA	0.05
HEXACHLOROBUTADIENE	2	0	0	--	--	--	1	1	0	2	0.9	NA
ISOPROPYLBENZENE	2	0	0	--	--	--	1	1	--	--	NA	NA
METHYLENE CHLORIDE	2	0	0	--	--	--	1	1	0	0	4	NA
N-BUTYLBENZENE	2	0	0	--	--	--	1	1	--	--	NA	NA
N-PROPYLBENZENE	2	0	0	--	--	--	1	1	0	0	240	NA
NAPHTHALENE	2	0	0	--	--	--	1	1	0	0	6	NA
P-ISOPROPYLTOLUENE	2	0	0	--	--	--	1	1	--	--	NA	NA
SEC-BUTYLBENZENE	2	0	0	--	--	--	1	1	0	0	240	NA
STYRENE	2	0	0	--	--	--	1	1	0	0	1,600	100
TETRACHLOROETHENE	2	0	0	--	--	--	1	1	0	2	0.7	5
TOLUENE	2	0	0	--	--	--	1	1	0	0	720	150
TRANS-1,2-DICHLOROETHENE	2	0	0	--	--	--	1	1	0	0	120	10
TRANS-1,3-DICHLOROPROPENE	2	0	0	--	--	--	1	1	0	2	0.4	0.5
TRICHLOROETHENE	2	0	0	--	--	--	1	1	0	2	0.03	5
TRICHLOROFLUOROMETHANE	2	0	0	--	--	--	1	1	--	--	NA	NA
VINYL CHLORIDE	2	0	0	--	--	--	1	1	0	2	0.02	0.5
XYLENE (TOTAL)	2	0	0	--	--	--	1	1	0	0	210	1,800
Semivolatile Organic Compounds (µg/L)												
1,2,4-TRICHLOROBENZENE	2	0	0	--	--	--	10	10	0	0	190	5
1,2-DICHLOROBENZENE	2	0	0	--	--	--	10	10	0	0	370	600
1,3-DICHLOROBENZENE	2	0	0	--	--	--	10	10	0	2	6	NA

TABLE 5-14: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Semivolatile Organic Compounds (µg/L)												
1,4-DICHLOROBENZENE	2	0	0	--	--	--	**10**	**10**	0	2	0.5	5
2,2'-OXYBIS(1-CHLOROPROPANE)	2	0	0	--	--	--	10	10	--	--	NA	NA
2,4,5-TRICHLOROPHENOL	2	0	0	--	--	--	25	25	0	0	3,600	50
2,4,6-TRICHLOROPHENOL	2	0	0	--	--	--	**10**	**10**	0	2	1	NA
2,4-DICHLOROPHENOL	2	0	0	--	--	--	10	10	0	0	110	NA
2,4-DIMETHYLPHENOL	2	0	0	--	--	--	10	10	0	0	730	NA
2,4-DINITROPHENOL	2	0	0	--	--	--	25	25	0	0	73	NA
2,4-DINITROTOLUENE	2	0	0	--	--	--	10	10	0	0	73	NA
2,6-DINITROTOLUENE	2	0	0	--	--	--	10	10	0	0	36	NA
2-CHLORONAPHTHALENE	2	0	0	--	--	--	10	10	--	--	NA	NA
2-CHLOROPHENOL	2	0	0	--	--	--	10	10	0	0	30	NA
2-METHYLNAPHTHALENE	2	0	0	--	--	--	10	10	--	--	NA	NA
2-METHYLPHENOL	2	0	0	--	--	--	10	10	0	0	1,800	NA
2-NITROANILINE	2	0	0	--	--	--	**25**	**25**	0	2	1	NA
2-NITROPHENOL	2	0	0	--	--	--	10	10	--	--	NA	NA
3,3'-DICHLOROBENZIDINE	2	0	0	--	--	--	**10**	**10**	0	2	0.2	NA
3-NITROANILINE	2	0	0	--	--	--	25	25	--	--	NA	NA
4,6-DINITRO-2-METHYLPHENOL	2	0	0	--	--	--	25	25	--	--	NA	NA
4-BROMOPHENYL-PHENYLETHER	2	0	0	--	--	--	10	10	--	--	NA	NA
4-CHLORO-3-METHYLPHENOL	2	0	0	--	--	--	10	10	--	--	NA	NA
4-CHLOROANILINE	2	0	0	--	--	--	10	10	0	0	150	NA
4-CHLOROPHENYL-PHENYLETHER	2	0	0	--	--	--	10	10	--	--	NA	NA
4-METHYLPHENOL	2	0	0	--	--	--	10	10	0	0	180	NA
4-NITROANILINE	2	0	0	--	--	--	25	25	--	--	NA	NA
4-NITROPHENOL	2	0	0	--	--	--	25	25	--	--	NA	NA
ACENAPHTHENE	2	1	50	2	2J	2J	10	10	0	0	370	NA
ACENAPHTHYLENE	2	0	0	--	--	--	10	10	--	--	NA	NA
ANTHRACENE	2	0	0	--	--	--	10	10	0	0	1,800	NA
BENZO(A)ANTHRACENE	2	0	0	--	--	--	**10**	**10**	0	2	0.09	0.1
BENZO(A)PYRENE	2	0	0	--	--	--	**10**	**10**	0	2	0.009	0.2
BENZO(B)FLUORANTHENE	2	0	0	--	--	--	**10**	**10**	0	2	0.09	NA

TABLE 5-14: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

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Semivolatile Organic Compounds (µg/L)												
BENZO(G,H,I)PERYLENE	2	0	0	--	--	--	10	10	--	--	NA	NA
BENZO(K)FLUORANTHENE	2	0	0	--	--	--	**10**	**10**	0	2	0.06	NA
BIS(2-CHLOROETHOXY)METHANE	2	0	0	--	--	--	10	10	--	--	NA	NA
BIS(2-CHLOROETHYL)ETHER	2	0	0	--	--	--	**10**	**10**	0	2	0.01	NA
BIS(2-ETHYLHEXYL)PHTHALATE	2	0	0	--	--	--	**10**	**10**	0	2	5	NA
BUTYLBENZYLPHTHALATE	2	0	0	--	--	--	10	10	0	0	7,300	NA
CARBAZOLE	2	0	0	--	--	--	**10**	**10**	0	2	3	NA
CHRYSENE	2	0	0	--	--	--	**10**	**10**	0	2	0.6	NA
DI-N-BUTYLPHTHALATE	2	0	0	--	--	--	10	10	--	--	NA	NA
DI-N-OCTYLPHTHALATE	2	0	0	--	--	--	10	10	--	--	NA	NA
DIBENZO(A,H)ANTHRACENE	2	0	0	--	--	--	**10**	**10**	0	2	0.009	NA
DIBENZOFURAN	2	0	0	--	--	--	10	10	0	0	24	NA
DIETHYLPHTHALATE	2	0	0	--	--	--	10	10	0	0	29,000	NA
DIMETHYLPHTHALATE	2	0	0	--	--	--	10	10	0	0	360,000	NA
FLUORANTHENE	2	0	0	--	--	--	10	10	0	0	1,500	NA
FLUORENE	2	1	50	1	1J	1J	10	10	0	0	240	NA
HEXACHLOROBENZENE	2	0	0	--	--	--	**10**	**10**	0	2	0.04	1
HEXACHLOROBUTADIENE	2	0	0	--	--	--	**10**	**10**	0	2	0.9	NA
HEXACHLOROCYCLOPENTADIENE	2	0	0	--	--	--	10	10	0	0	220	NA
HEXACHLOROETHANE	2	0	0	--	--	--	**10**	**10**	0	2	5	NA
INDENO(1,2,3-CD)PYRENE	2	0	0	--	--	--	**10**	**10**	0	2	0.09	NA
ISOPHORONE	2	0	0	--	--	--	10	10	0	0	71	NA
N-NITROSO-DI-N-PROPYLAMINE	2	0	0	--	--	--	**10**	**10**	0	2	0.01	NA
N-NITROSODIPHENYLAMINE	2	0	0	--	--	--	10	10	0	0	14	NA
NAPHTHALENE	2	0	0	--	--	--	**10**	**10**	0	2	6	NA
NITROBENZENE	2	0	0	--	--	--	**10**	**10**	0	2	3	NA
PENTACHLOROPHENOL	2	0	0	--	--	--	**25**	**25**	0	2	0.6	1
PHENANTHRENE	2	1	50	2	2J	2J	10	10	--	--	NA	NA
PHENOL	2	0	0	--	--	--	10	10	0	0	22,000	NA
PYRENE	2	0	0	--	--	--	10	10	0	0	180	NA

TABLE 5-14: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Environmental Baseline Survey

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
PCBs/Pesticides (µg/L)												
4,4'-DDD	2	0	0	--	--	--	0.096	0.096	0	0	0.3	NA
4,4'-DDE	2	0	0	--	--	--	0.096	0.096	0	0	0.2	NA
4,4'-DDT	2	0	0	--	--	--	0.096	0.096	0	0	0.2	NA
ALDRIN	2	0	0	--	--	--	**0.048**	**0.048**	0	2	0.004	NA
ALPHA-BHC	2	0	0	--	--	--	0.048	0.048	--	--	NA	NA
ALPHA-CHLORDANE	2	0	0	--	--	--	0.048	0.048	0	0	0.2	NA
AROCLOR-1016	2	0	0	--	--	--	0.96	0.96	0	0	1	NA
AROCLOR-1221	2	0	0	--	--	--	**1.9**	**1.9**	0	2	0.03	NA
AROCLOR-1232	2	0	0	--	--	--	**0.96**	**0.96**	0	2	0.03	NA
AROCLOR-1242	2	0	0	--	--	--	**0.96**	**0.96**	0	2	0.03	NA
AROCLOR-1248	2	0	0	--	--	--	**0.96**	**0.96**	0	2	0.03	NA
AROCLOR-1254	2	0	0	--	--	--	**0.96**	**0.96**	0	2	0.03	NA
AROCLOR-1260	2	0	0	--	--	--	**0.96**	**0.96**	0	2	0.03	NA
BETA-BHC	2	0	0	--	--	--	0.048	0.048	--	--	NA	NA
DELTA-BHC	2	0	0	--	--	--	0.048	0.048	--	--	NA	NA
DIELDRIN	2	0	0	--	--	--	**0.096**	**0.096**	0	2	0.004	NA
ENDOSULFAN I	2	0	0	--	--	--	0.048	0.048	0	0	220	NA
ENDOSULFAN II	2	0	0	--	--	--	0.096	0.096	--	--	NA	NA
ENDOSULFAN SULFATE	2	0	0	--	--	--	0.096	0.096	--	--	NA	NA
ENDRIN	2	0	0	--	--	--	0.096	0.096	0	0	11	2
ENDRIN ALDEHYDE	2	0	0	--	--	--	0.096	0.096	--	--	NA	NA
ENDRIN KETONE	2	0	0	--	--	--	0.096	0.096	--	--	NA	NA
GAMMA-BHC (LINDANE)	2	0	0	--	--	--	0.048	0.048	--	--	NA	NA
GAMMA-CHLORDANE	2	0	0	--	--	--	0.048	0.048	0	0	0.2	NA
HEPTACHLOR	2	0	0	--	--	--	**0.048**	**0.048**	0	2	0.02	0.01
HEPTACHLOR EPOXIDE	2	0	0	--	--	--	**0.048**	**0.048**	0	2	0.007	0.01
METHOXYCHLOR	2	0	0	--	--	--	0.48	0.48	0	0	180	30
TOXAPHENE	2	0	0	--	--	--	**4.8**	**4.8**	0	2	0.06	3

TABLE 5-14: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Environmental Baseline Survey
Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
BHC	Benzene Hexachloride
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethene
DDT	Dichlorodiphenyltrichloroethane
J	Estimated value
MCL	Maximum Contaminant Level
NA	No criteria available
PCB	Polychlorinated biphenyl
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)
µg/L	Micrograms per liter

TABLE 5-15: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

TPH Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
1,1,1,2-TETRACHLOROETHANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
1,1,1-TRICHLOROETHANE	12	0	0	--	--	--	5.6	2,900	0	0	1,200,000
1,1,2,2-TETRACHLOROETHANE	12	0	0	--	--	--	5.6	**2,900**	0	1	410
1,1,2-TRICHLOROETHANE	12	0	0	--	--	--	5.6	**2,900**	0	1	730
1,1-DICHLOROETHANE	12	0	0	--	--	--	5.6	**2,900**	0	1	2,800
1,1-DICHLOROETHENE	12	0	0	--	--	--	5.6	2,900	0	0	120,000
1,1-DICHLOROPROPENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
1,2,3-TRICHLOROBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
1,2,3-TRICHLOROPROPANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
1,2,4-TRICHLOROBENZENE	9	0	0	--	--	--	5.6	2,900	0	0	650,000
1,2,4-TRIMETHYLBENZENE	9	2	22	2,000	2.4 J	4,000	6	9.1	0	0	52,000
1,2-DIBROMO-3-CHLOROPROPANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
1,2-DICHLOROBENZENE	9	0	0	--	--	--	5.6	2,900	0	0	370,000
1,2-DICHLOROETHANE	12	0	0	--	--	--	5.6	**2,900**	0	1	280
1,2-DICHLOROETHENE (TOTAL)	3	0	0	--	--	--	11	11	0	0	43,000
1,2-DICHLOROPROPANE	12	0	0	--	--	--	5.6	**2,900**	0	1	340
1,3,5-TRIMETHYLBENZENE	9	1	11	2,500	2,500 J	2,500 J	5.6	9.1	0	0	21,000
1,3-DICHLOROBENZENE	9	0	0	--	--	--	5.6	2,900	0	0	16,000
1,3-DICHLOROPROPANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
1,4-DICHLOROBENZENE	9	0	0	--	--	--	5.6	2,900	0	0	3,400
2,2-DICHLOROPROPANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
2-BUTANONE	12	0	0	--	--	--	11	58,000	--	--	NA
2-CHLOROTOLUENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
2-HEXANONE	3	0	0	--	--	--	11	11	--	--	NA
4-CHLOROTOLUENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
4-METHYL-2-PENTANONE	12	2	17	7,500	4 J	15,000 J	11	91	--	--	NA
ACETONE	12	0	0	--	--	--	11	58,000	0	0	1,600,000
BENZENE	22	4	18	320	2 J	**900**	0.56	**11,000**	1	4	600
BROMOBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
BROMOCHLOROMETHANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
BROMODICHLOROMETHANE	12	0	0	--	--	--	5.6	**2,900**	0	1	820

TABLE 5-15: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

TPH Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
BROMOFORM	12	0	0	--	--	--	5.6	2,900	0	0	62,000
BROMOMETHANE	12	0	0	--	--	--	5.6	2,900	0	0	3,900
CARBON DISULFIDE	12	4	33	9	3.5J	19	6	2,900	0	0	360,000
CARBON TETRACHLORIDE	12	0	0	--	--	--	5.6	**2,900**	0	1	250
CHLOROBENZENE	12	0	0	--	--	--	5.6	2,900	0	0	150,000
CHLOROETHANE	12	0	0	--	--	--	5.6	2,900	0	0	3,000
CHLOROFORM	12	0	0	--	--	--	5.6	**2,900**	0	1	940
CHLOROMETHANE	12	0	0	--	--	--	5.6	**2,900**	0	1	1,200
CIS-1,2-DICHLOROETHENE	9	0	0	--	--	--	5.6	2,900	0	0	43,000
CIS-1,3-DICHLOROPROPENE	12	0	0	--	--	--	5.6	**2,900**	0	1	780
DIBROMOCHLOROMETHANE	12	0	0	--	--	--	5.6	**2,900**	0	1	1,100
DIBROMOMETHANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
DICHLORODIFLUOROMETHANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
ETHYLBENZENE	22	5	23	7,400	20	**22,000**	0.56	**11,000**	2	2	8,900
ETHYLENE DIBROMIDE	9	0	0	--	--	--	5.6	2,900	--	--	NA
HEXACHLOROBUTADIENE	9	0	0	--	--	--	5.6	2,900	0	0	6,200
ISOPROPYLBENZENE	9	2	22	9,000	3J	18,000	6	9.1	--	--	NA
METHYL-T-BUTYL ETHER	13	0	0	--	--	--	11	5,800	0	0	17,000
METHYLENE CHLORIDE	12	0	0	--	--	--	5.6	2,900	0	0	9,100
N-BUTYLBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
N-PROPYLBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
NAPHTHALENE	9	1	11	8	8	8	6	2,900	0	0	56,000
P-ISOPROPYLTOLUENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
SEC-BUTYLBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
STYRENE	12	0	0	--	--	--	5.6	2,900	0	0	1,700,000
TERT-BUTYLBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
TETRACHLOROETHENE	12	0	0	--	--	--	5.6	**2,900**	0	1	1,500
TOLUENE	22	2	9	40	30	50	0.56	11,000	0	0	520,000
TRANS-1,2-DICHLOROETHENE	9	0	0	--	--	--	5.6	2,900	0	0	69,000
TRANS-1,3-DICHLOROPROPENE	12	0	0	--	--	--	5.6	**2,900**	0	1	780
TRICHLOROETHENE	12	0	0	--	--	--	5.6	**2,900**	0	1	53

TABLE 5-15: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

TPH Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
TRICHLOROFLUOROMETHANE	9	0	0	--	--	--	5.6	2,900	0	0	390,000
VINYL CHLORIDE	12	0	0	--	--	--	5.6	**2,900**	0	1	79
XYLENE (TOTAL)	22	8	36	16,000	2J	96,000	1.2	11,000	0	0	270,000
Semivolatile Organic Compounds (µg/kg)											
1,2,4-TRICHLOROBENZENE	3	0	0	--	--	--	37	150	0	0	650,000
1,2-DICHLOROBENZENE	3	0	0	--	--	--	18	73	0	0	370,000
1,3-DICHLOROBENZENE	3	0	0	--	--	--	18	73	0	0	16,000
1,4-DICHLOROBENZENE	3	0	0	--	--	--	18	73	0	0	3,400
2,2'-OXYBIS(1-CHLOROPROPANE)	3	0	0	--	--	--	37	150	--	--	NA
2,4,5-TRICHLOROPHENOL	3	0	0	--	--	--	89	360	0	0	6,100,000
2,4,6-TRICHLOROPHENOL	3	0	0	--	--	--	37	150	0	0	6,900
2,4-DICHLOROPHENOL	3	0	0	--	--	--	37	150	0	0	180,000
2,4-DIMETHYLPHENOL	3	0	0	--	--	--	37	150	0	0	1,200,000
2,4-DINITROPHENOL	1	0	0	--	--	--	360	360	0	0	120,000
2,4-DINITROTOLUENE	3	0	0	--	--	--	37	150	0	0	120,000
2,6-DINITROTOLUENE	3	0	0	--	--	--	37	150	0	0	61,000
2-CHLORONAPHTHALENE	3	0	0	--	--	--	37	150	--	--	NA
2-CHLOROPHENOL	3	0	0	--	--	--	37	150	0	0	63,000
2-METHYLPHENOL	3	0	0	--	--	--	37	150	--	--	NA
2-NITROANILINE	3	0	0	--	--	--	89	360	0	0	1,700
2-NITROPHENOL	3	0	0	--	--	--	37	150	--	--	NA
3,3'-DICHLOROBENZIDINE	3	0	0	--	--	--	37	150	0	0	1,100
3-NITROANILINE	3	0	0	--	--	--	89	360	--	--	NA
4,6-DINITRO-2-METHYLPHENOL	1	0	0	--	--	--	360	360	--	--	NA
4-BROMOPHENYL-PHENYLETHER	3	0	0	--	--	--	37	150	--	--	NA
4-CHLORO-3-METHYLPHENOL	3	0	0	--	--	--	37	150	--	--	NA
4-CHLOROANILINE	3	0	0	--	--	--	37	150	0	0	240,000
4-CHLOROPHENYL-PHENYLETHER	3	0	0	--	--	--	37	150	--	--	NA
4-METHYLPHENOL	3	0	0	--	--	--	37	150	0	0	310,000
4-NITROANILINE	3	0	0	--	--	--	89	360	--	--	NA

TABLE 5-15: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

TPH Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Semivolatile Organic Compounds (µg/kg)											
4-NITROPHENOL	3	0	0	--	--	--	89	360	--	--	NA
BIS(2-CHLOROETHOXY)METHANE	3	0	0	--	--	--	37	150	--	--	NA
BIS(2-CHLOROETHYL)ETHER	3	0	0	--	--	--	37	150	0	0	210
BIS(2-ETHYLHEXYL)PHTHALATE	3	0	0	--	--	--	14	60	0	0	35,000
BUTYLBENZYLPHTHALATE	3	0	0	--	--	--	37	150	0	0	12,000,000
CARBAZOLE	3	2	67	67	24 J	110 J	150	150	0	0	24,000
DI-N-BUTYLPHTHALATE	3	0	0	--	--	--	37	150	--	--	NA
DI-N-OCTYLPHTHALATE	3	0	0	--	--	--	37	150	--	--	NA
DIBENZOFURAN	3	2	67	120	12 J	220	150	150	0	0	290,000
DIETHYLPHTHALATE	3	0	0	--	--	--	37	150	0	0	49,000,000
DIMETHYLPHTHALATE	3	0	0	--	--	--	37	150	0	0	100,000,000
HEXACHLOROBENZENE	3	0	0	--	--	--	37	150	0	0	300
HEXACHLOROBUTADIENE	3	0	0	--	--	--	37	150	0	0	6,200
HEXACHLOROCYCLOPENTADIENE	3	0	0	--	--	--	37	150	0	0	370,000
HEXACHLOROETHANE	3	0	0	--	--	--	37	150	0	0	35,000
ISOPHORONE	3	0	0	--	--	--	37	150	0	0	510,000
N-NITROSO-DI-N-PROPYLAMINE	3	0	0	--	--	--	37	150	0	2	69
N-NITROSODIPHENYLAMINE	3	0	0	--	--	--	37	150	0	0	99,000
NITROBENZENE	3	0	0	--	--	--	37	150	0	0	20,000
PENTACHLOROPHENOL	3	0	0	--	--	--	89	360	0	0	3,000
PHENOL	3	0	0	--	--	--	37	150	0	0	37,000,000
Total Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	22	12	55	78	8 J	280	1.1	57	--	--	NA
GASOLINE RANGE ORGANICS	22	10	45	750	0.3 J	2,800	0.56	10	--	--	NA
JET FUEL	2	0	0	--	--	--	10	10	--	--	NA
JP5 RANGE ORGANICS	16	0	0	--	--	--	11	87	--	--	NA
MOTOR OIL RANGE ORGANICS	16	4	25	150	36	420 J	11	87	--	--	NA
Metals (mg/kg)											
ALUMINUM	12	12	100	13,700	4,240	30,100	0	0	0	0	76,000

TABLE 5-15: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

TPH Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Metals (mg/kg)											
ANTIMONY	12	9	75	1.3	0.41	2.7	0.44	0.45	0	0	31.0
ARSENIC	12	11	92	**4.1**	**0.82**	**9.8**	0.22	0.22	11	0	0.39
BARIUM	12	12	100	72.6	20	156	0	0	0	0	5,400
BERYLLIUM	12	0	0	--	--	--	0.01	0.025	0	0	150
CADMIUM	12	7	58	0.32	0.028	0.71	0.026	0.048	0	0	37.0
CALCIUM	12	12	100	3,730	1,360	12,000	0	0	--	--	NA
CHROMIUM	12	12	100	56.2	26.5	105	0	0	0	0	210
COBALT	12	12	100	9.8	3.4	19	0	0	0	0	900
COPPER	12	11	92	24.5	3	60.9	4.8	4.8	0	0	3,100
IRON	12	12	100	22,100	7,800	**44,000**	0	0	4	0	23,000
LEAD	12	12	100	22.5	1.8	68.2	0	0	0	0	150
MAGNESIUM	12	12	100	6,210	1,760	14,400	0	0	--	--	NA
MANGANESE	12	12	100	242	74.3	508	0	0	0	0	1,800
MERCURY	12	9	75	6.3	0.19	**52.5**	0.061	0.12	1	0	23.0
MOLYBDENUM	12	3	25	0.42	0.34	0.48	0.11	0.4	0	0	390
NICKEL	12	12	100	52.4	14.6	107	0	0	0	0	1,600
POTASSIUM	12	12	100	1,840	304	4,390	0	0	--	--	NA
SELENIUM	12	2	17	0.89	0.82	0.95	0.49	0.77	0	0	390
SILVER	12	0	0	--	--	--	0.058	0.16	0	0	390
SODIUM	12	6	50	2,360	166	6,440	39	157	--	--	NA
THALLIUM	12	0	0	--	--	--	0.29	0.62	0	0	5.2
VANADIUM	12	12	100	43.1	15.7	86.3	0	0	0	0	550
ZINC	12	12	100	60.2	14.2	162	0	0	0	0	23,000

TABLE 5-15: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

TPH Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
J	Estimated value
mg/kg	Milligrams per kilogram
NA	No PRG available
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)
µg/kg	Micrograms per kilogram

TABLE 5-16: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

TPH Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
1,1,1,2-TETRACHLOROETHANE	12	0	0	--	--	--	**5**	**5**	0	12	0.4	NA
1,1,1-TRICHLOROETHANE	15	0	0	--	--	--	1	10	0	0	3,200	200
1,1,2,2-TETRACHLOROETHANE	15	0	0	--	--	--	**1**	**10**	0	15	0.06	1
1,1,2-TRICHLOROETHANE	15	0	0	--	--	--	**1**	**10**	0	15	0.2	5
1,1-DICHLOROETHANE	15	0	0	--	--	--	1	**10**	0	13	2	5
1,1-DICHLOROETHENE	15	0	0	--	--	--	1	10	0	0	340	6
1,1-DICHLOROPROPENE	12	0	0	--	--	--	5	5	--	--	NA	NA
1,2,3-TRICHLOROBENZENE	12	0	0	--	--	--	5	5	--	--	NA	NA
1,2,3-TRICHLOROPROPANE	12	0	0	--	--	--	**5**	**5**	0	12	0.006	NA
1,2,4-TRICHLOROBENZENE	12	0	0	--	--	--	5	5	0	0	190	5
1,2,4-TRIMETHYLBENZENE	15	1	7	3	3J	3J	1	10	0	0	12	NA
1,2-DIBROMO-3-CHLOROPROPANE	12	0	0	--	--	--	**5**	**5**	0	12	0.002	0.2
1,2-DICHLOROBENZENE	12	0	0	--	--	--	5	5	0	0	370	600
1,2-DICHLOROETHANE	15	0	0	--	--	--	**1**	**10**	0	15	0.1	0.5
1,2-DICHLOROPROPANE	15	0	0	--	--	--	**1**	**10**	0	15	0.2	5
1,3,5-TRIMETHYLBENZENE	15	0	0	--	--	--	1	10	0	0	12	NA
1,3-DICHLOROBENZENE	12	0	0	--	--	--	5	5	0	0	6	NA
1,3-DICHLOROPROPANE	12	0	0	--	--	--	5	5	--	--	NA	NA
1,4-DICHLOROBENZENE	12	0	0	--	--	--	**5**	**5**	0	12	0.5	5
2,2-DICHLOROPROPANE	12	0	0	--	--	--	5	5	--	--	NA	NA
2-BUTANONE	12	0	0	--	--	--	100	100	--	--	NA	NA
2-CHLOROTOLUENE	12	1	8	3	3J	3J	5	5	--	--	NA	NA
4-CHLOROTOLUENE	12	1	8	3	3J	3J	5	5	--	--	NA	NA
4-METHYL-2-PENTANONE	12	1	8	33	33J	33J	50	50	--	--	NA	NA
ACETONE	12	0	0	--	--	--	38	100	0	0	610	NA
BENZENE	34	9	26	**150**	**1.2**	**620**	**0.5**	**10**	9	25	0.3	1
BROMOBENZENE	12	0	0	--	--	--	5	5	0	0	20	NA
BROMOCHLOROMETHANE	12	0	0	--	--	--	5	5	--	--	NA	NA
BROMODICHLOROMETHANE	15	0	0	--	--	--	**1**	**10**	0	15	0.2	80
BROMOFORM	15	0	0	--	--	--	1	**10**	0	1	9	80
BROMOMETHANE	15	0	0	--	--	--	5	**10**	0	1	9	NA

TABLE 5-16: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

TPH Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
CARBON DISULFIDE	12	1	8	0.3	0.3J	0.3J	5	5	0	0	1,000	NA
CARBON TETRACHLORIDE	15	0	0	--	--	--	**1**	**10**	0	15	0.2	0.5
CHLOROBENZENE	15	0	0	--	--	--	1	10	0	0	110	70
CHLOROETHANE	15	0	0	--	--	--	**5**	**50**	0	15	5	NA
CHLOROFORM	15	1	7	**3**	**3J**	**3J**	**1**	**10**	1	14	0.5	80
CHLOROMETHANE	15	0	0	--	--	--	**5**	**50**	0	15	2	NA
CIS-1,2-DICHLOROETHENE	15	0	0	--	--	--	1	10	0	0	61	6
CIS-1,3-DICHLOROPROPENE	15	0	0	--	--	--	**1**	**10**	0	15	0.4	0.5
DIBROMOCHLOROMETHANE	15	0	0	--	--	--	**1**	**10**	0	15	0.1	80
DIBROMOMETHANE	12	0	0	--	--	--	5	5	--	--	NA	NA
DICHLORODIFLUOROMETHANE	12	0	0	--	--	--	5	5	0	0	390	NA
ETHYLBENZENE	34	12	35	**180**	0.7J	**1,498**	0.5	**10**	7	11	3	300
ETHYLENE DIBROMIDE	12	0	0	--	--	--	5	5	--	--	NA	0.05
HEXACHLOROBUTADIENE	12	0	0	--	--	--	**5**	**5**	0	12	0.9	NA
ISOPROPYLBENZENE	12	4	33	42	0.5J	145	5	5	--	--	NA	NA
M,P-XYLENE	2	0	0	--	--	--	1	1	0	0	210	NA
METHYL-T-BUTYL ETHER	24	2	8	**23**	3	**43**	2	**120**	1	14	6	13
METHYLENE CHLORIDE	15	9	60	4	2J	**6**	2	**50**	4	4	4	NA
N-BUTYLBENZENE	12	1	8	6	6	6	5	5	--	--	NA	NA
N-PROPYLBENZENE	12	2	17	35	2J	67	5	5	0	0	240	NA
NAPHTHALENE	12	1	8	**7**	**7**	**7**	5	5	1	0	6	NA
O-XYLENE	2	0	0	--	--	--	1	1	0	0	210	NA
P-ISOPROPYLTOLUENE	12	1	8	0.6	0.6J	0.6J	5	5	--	--	NA	NA
SEC-BUTYLBENZENE	12	1	8	7	7	7	5	5	0	0	240	NA
STYRENE	15	0	0	--	--	--	1	10	0	0	1,600	100
TERT-BUTYLBENZENE	12	1	8	2	2J	2J	5	5	0	0	240	NA
TETRACHLOROETHENE	15	0	0	--	--	--	**1**	**10**	0	15	0.7	5
TOLUENE	34	8	24	20	0.6J	53	0.5	12	0	0	720	150
TRANS-1,2-DICHLOROETHENE	15	0	0	--	--	--	1	10	0	0	120	10
TRANS-1,3-DICHLOROPROPENE	15	0	0	--	--	--	**1**	**10**	0	15	0.4	0.5
TRICHLOROETHENE	15	0	0	--	--	--	**1**	**10**	0	15	0.03	5

TABLE 5-16: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

TPH Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Volatile Organic Compounds (µg/L)												
TRICHLOROFLUOROMETHANE	12	0	0	--	--	--	5	5	--	--	NA	NA
VINYL CHLORIDE	15	1	7	**1**	**1J**	**1J**	**0.5**	**5**	1	14	0.02	0.5
XYLENE (TOTAL)	32	14	44	**470**	1.9	**4,459**	0.5	10	3	0	210	1,800
Total Petroleum Hydrocarbons (mg/L)												
DIESEL RANGE ORGANICS	30	12	40	2	0.05	10	0.05	0.5	--	--	NA	NA
GASOLINE RANGE ORGANICS	29	15	52	35	0.03J	382.8	0.05	0.5	--	--	NA	NA
JET FUEL	10	3	30	0.2	0.084	0.46	0.05	2.8	--	--	NA	NA
JP5 RANGE ORGANICS	11	0	0	--	--	--	0.1	0.14	--	--	NA	NA
MOTOR OIL RANGE ORGANICS	19	8	42	2	0.29	3.18	0.1	0.5	--	--	NA	NA
Metals (µg/L)												
Filtered												
LEAD	1	1	100	7.3	7.3	7.3	0	0	--	--	NA	15.0

TABLE 5-16: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

TPH Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
J	Estimated value
MCL	Maximum Contaminant Level
mg/L	Milligrams per liter
NA	No criteria available
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)
µg/L	Micrograms per liter

TABLE 5-17: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

All Soil Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
1,1,1,2-TETRACHLOROETHANE	12	0	0	--	--	--	2	2,900	--	--	NA
1,1,1-TRICHLOROETHANE	66	0	0	--	--	--	2	13,000	0	0	1,200,000
1,1,2,2-TETRACHLOROETHANE	60	0	0	--	--	--	2	**13,000**	0	5	410
1,1,2-TRICHLOROETHANE	60	0	0	--	--	--	2	**13,000**	0	5	730
1,1-DICHLOROETHANE	61	0	0	--	--	--	2	**13,000**	0	3	2,800
1,1-DICHLOROETHENE	66	0	0	--	--	--	2	13,000	0	0	120,000
1,1-DICHLOROPROPENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
1,2,3-TRICHLOROBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
1,2,3-TRICHLOROPROPANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
1,2,4-TRICHLOROBENZENE	9	0	0	--	--	--	5.6	2,900	0	0	650,000
1,2,4-TRIMETHYLBENZENE	9	2	22	2,000	2.4 J	4,000	6	9.1	0	0	52,000
1,2-DIBROMO-3-CHLOROPROPANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
1,2-DICHLOROBENZENE	12	0	0	--	--	--	2	2,900	0	0	370,000
1,2-DICHLOROETHANE	66	0	0	--	--	--	2	**13,000**	0	6	280
1,2-DICHLOROETHENE (TOTAL)	37	0	0	--	--	--	5	13,000	0	0	43,000
1,2-DICHLOROPROPANE	57	0	0	--	--	--	5	**13,000**	0	5	340
1,3,5-TRIMETHYLBENZENE	9	1	11	2,500	2,500 J	2,500 J	5.6	9.1	0	0	21,000
1,3-DICHLOROBENZENE	12	0	0	--	--	--	2	2,900	0	0	16,000
1,3-DICHLOROPROPANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
1,4-DICHLOROBENZENE	12	0	0	--	--	--	2	2,900	0	0	3,400
2,2-DICHLOROPROPANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
2-BUTANONE	63	1	2	240	240 J	240 J	10	58,000	--	--	NA
2-CHLOROTOLUENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
2-HEXANONE	48	0	0	--	--	--	5	13,000	--	--	NA
4-CHLOROTOLUENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
4-METHYL-2-PENTANONE	57	4	7	3,800	4 J	15,000 J	5	13,000	--	--	NA
ACETONE	57	6	11	430	66	1,500 J	11	58,000	0	0	1,600,000
BENZENE	76	11	14	2,000	2 J	**12,000**	0.56	**11,000**	4	8	600
BROMOBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
BROMOCHLOROMETHANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
BROMODICHLOROMETHANE	57	0	0	--	--	--	5	**13,000**	0	5	820

TABLE 5-17: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

All Soil Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
BROMOFORM	57	0	0	--	--	--	5	13,000	0	0	62,000
BROMOMETHANE	57	0	0	--	--	--	5.6	**13,000**	0	2	3,900
CARBON DISULFIDE	57	8	14	9	3J	19	5	13,000	0	0	360,000
CARBON TETRACHLORIDE	57	0	0	--	--	--	5	**13,000**	0	5	250
CHLOROBENZENE	60	0	0	--	--	--	2	13,000	0	0	150,000
CHLOROETHANE	60	0	0	--	--	--	2	**13,000**	0	2	3,000
CHLOROFORM	57	0	0	--	--	--	5	**13,000**	0	5	940
CHLOROMETHANE	60	0	0	--	--	--	2	**13,000**	0	5	1,200
CIS-1,2-DICHLOROETHENE	29	0	0	--	--	--	2	2,900	0	0	43,000
CIS-1,3-DICHLOROPROPENE	57	0	0	--	--	--	5	**13,000**	0	5	780
DIBROMOCHLOROMETHANE	57	0	0	--	--	--	5	**13,000**	0	5	1,100
DIBROMOMETHANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
DICHLORODIFLUOROMETHANE	9	0	0	--	--	--	5.6	2,900	--	--	NA
ETHYLBENZENE	76	18	24	6,000	11	**50,000**	0.56	**11,000**	3	2	8,900
ETHYLENE DIBROMIDE	22	0	0	--	--	--	5.6	13,000	--	--	NA
HEXACHLOROBUTADIENE	9	0	0	--	--	--	5.6	2,900	0	0	6,200
HEXANE	17	1	6	14,000	14,000	14,000	5	20	0	0	110,000
ISOPROPYLBENZENE	9	2	22	9,000	3J	18,000	6	9.1	--	--	NA
M,P-XYLENE	9	3	33	1,500	32	4,000	2	4,000	0	0	270,000
METHYL-T-BUTYL ETHER	16	0	0	--	--	--	2	5,800	0	0	17,000
METHYLENE CHLORIDE	66	4	6	55	32	94	2	**13,000**	0	1	9,100
N-BUTYLBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
N-PROPYLBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
NAPHTHALENE	12	1	8	8	8	8	2	2,900	0	0	56,000
O-XYLENE	20	3	15	1,500	9.6	4,000	2	2,000	0	0	270,000
P-ISOPROPYLTOLUENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
SEC-BUTYLBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
STYRENE	57	0	0	--	--	--	5	13,000	0	0	1,700,000
TERT-BUTYLBENZENE	9	0	0	--	--	--	5.6	2,900	--	--	NA
TETRACHLOROETHENE	66	0	0	--	--	--	2	**13,000**	0	3	1,500
TOLUENE	76	23	30	10,000	2J	210,000	0.56	11,000	0	0	520,000

TABLE 5-17: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

All Soil Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Volatile Organic Compounds (µg/kg)											
TRANS-1,2-DICHLOROETHENE	29	0	0	--	--	--	2	2,900	0	0	69,000
TRANS-1,3-DICHLOROPROPENE	57	0	0	--	--	--	5	**13,000**	0	5	780
TRICHLOROETHENE	66	0	0	--	--	--	2	**13,000**	0	6	53
TRICHLOROFLUOROMETHANE	20	0	0	--	--	--	5	2,900	0	0	390,000
VINYL ACETATE	25	0	0	--	--	--	10	86	0	0	430,000
VINYL CHLORIDE	66	0	0	--	--	--	2	**13,000**	0	6	79
XYLENE (TOTAL)	67	15	22	27,000	2J	250,000	1.2	11,000	0	0	270,000
Semivolatile Organic Compounds (µg/kg)											
1,2,4-TRICHLOROBENZENE	66	0	0	--	--	--	37	9,900	0	0	650,000
1,2-DICHLOROBENZENE	66	0	0	--	--	--	18	9,900	0	0	370,000
1,3-DICHLOROBENZENE	66	0	0	--	--	--	18	9,900	0	0	16,000
1,4-DICHLOROBENZENE	66	0	0	--	--	--	18	**9,900**	0	5	3,400
2,2'-OXYBIS(1-CHLOROPROPANE)	49	0	0	--	--	--	37	9,000	--	--	NA
2,4,5-TRICHLOROPHENOL	66	0	0	--	--	--	89	48,000	0	0	6,100,000
2,4,6-TRICHLOROPHENOL	66	0	0	--	--	--	37	**9,900**	0	3	6,900
2,4-DICHLOROPHENOL	66	0	0	--	--	--	37	9,900	0	0	180,000
2,4-DIMETHYLPHENOL	66	1	2	43	43 J	43 J	37	9,900	0	0	1,200,000
2,4-DINITROPHENOL	63	0	0	--	--	--	360	48,000	0	0	120,000
2,4-DINITROTOLUENE	66	0	0	--	--	--	37	9,900	0	0	120,000
2,6-DINITROTOLUENE	66	0	0	--	--	--	37	9,900	0	0	61,000
2-CHLORONAPHTHALENE	66	0	0	--	--	--	37	9,900	--	--	NA
2-CHLOROPHENOL	66	0	0	--	--	--	37	9,900	0	0	63,000
2-METHYLPHENOL	66	0	0	--	--	--	37	9,900	--	--	NA
2-NITROANILINE	66	0	0	--	--	--	89	**48,000**	0	38	1,700
2-NITROPHENOL	66	0	0	--	--	--	37	45,000	--	--	NA
3,3'-DICHLOROBENZIDINE	66	0	0	--	--	--	37	**45,000**	0	30	1,100
3-NITROANILINE	66	0	0	--	--	--	89	48,000	--	--	NA
4,6-DINITRO-2-METHYLPHENOL	64	0	0	--	--	--	360	48,000	--	--	NA
4-BROMOPHENYL-PHENYLETHER	66	0	0	--	--	--	37	9,900	--	--	NA
4-CHLORO-3-METHYLPHENOL	66	0	0	--	--	--	37	9,900	--	--	NA

TABLE 5-17: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

All Soil Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Semivolatile Organic Compounds (µg/kg)											
4-CHLOROANILINE	66	0	0	--	--	--	37	9,900	0	0	240,000
4-CHLOROPHENYL-PHENYLETHER	66	0	0	--	--	--	37	9,900	--	--	NA
4-METHYLPHENOL	66	0	0	--	--	--	37	9,900	0	0	310,000
4-NITROANILINE	66	0	0	--	--	--	89	48,000	--	--	NA
4-NITROPHENOL	66	0	0	--	--	--	89	48,000	--	--	NA
ANILINE	23	0	0	--	--	--	350	9,000	0	0	85,000
AZOBENZENE	23	0	0	--	--	--	350	**9,000**	0	2	4,400
BENZIDINE	23	0	0	--	--	--	**350**	**9,000**	0	23	2
BENZOIC ACID	15	0	0	--	--	--	1,700	48,000	0	0	100,000,000
BENZYL ALCOHOL	38	0	0	--	--	--	350	9,900	0	0	18,000,000
BIS(2-CHLOROETHOXY)METHANE	66	0	0	--	--	--	37	9,900	--	--	NA
BIS(2-CHLOROETHYL)ETHER	66	0	0	--	--	--	37	**9,900**	0	63	210
BIS(2-ETHYLHEXYL)PHTHALATE	66	8	12	59	19 J	160 J	14	9,900	0	0	35,000
BUTYLBENZYLPHTHALATE	66	0	0	--	--	--	37	9,900	0	0	12,000,000
CARBAZOLE	28	4	14	80	24 J	160 J	150	4,000	0	0	24,000
DI-N-BUTYLPHTHALATE	66	7	11	77	30 J	130 J	37	9,900	--	--	NA
DI-N-OCTYLPHTHALATE	66	1	2	94	94 J	94 J	37	9,900	--	--	NA
DIBENZOFURAN	66	5	8	330	12 J	1,200 J	150	9,900	0	0	290,000
DIETHYLPHTHALATE	66	1	2	22	22 J	22 J	37	9,900	0	0	49,000,000
DIMETHYLPHTHALATE	66	0	0	--	--	--	37	9,900	0	0	100,000,000
HEXACHLOROBENZENE	66	0	0	--	--	--	37	**9,900**	0	63	300
HEXACHLOROBUTADIENE	66	0	0	--	--	--	37	**9,900**	0	3	6,200
HEXACHLOROCYCLOPENTADIENE	66	0	0	--	--	--	37	9,900	0	0	370,000
HEXACHLOROETHANE	66	0	0	--	--	--	37	9,900	0	0	35,000
ISOPHORONE	66	0	0	--	--	--	37	9,900	0	0	510,000
N-NITROSO-DI-N-PROPYLAMINE	66	0	0	--	--	--	37	**9,900**	0	65	69
N-NITROSODIMETHYLAMINE	23	0	0	--	--	--	**350**	**9,000**	0	23	10
N-NITROSODIPHENYLAMINE	66	2	3	290	27 J	550 J	37	9,900	0	0	99,000
NITROBENZENE	66	0	0	--	--	--	37	9,900	0	0	20,000
PENTACHLOROPHENOL	66	0	0	--	--	--	89	**48,000**	0	18	3,000
PHENOL	66	0	0	--	--	--	37	9,900	0	0	37,000,000

TABLE 5-17: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

All Soil Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Polynuclear Aromatic Hydrocarbons (µg/kg)											
2-METHYLNAPHTHALENE	206	143	69	79	0.22J	10,000 J	5	100	--	--	NA
ACENAPHTHENE	206	109	53	120	0.28J	9,100 J	5	100	0	0	3,700,000
ACENAPHTHYLENE	203	146	72	10	0.23J	390 J	5	100	--	--	NA
ANTHRACENE	206	161	78	180	0.21J	17,000	5	100	0	0	22,000,000
BENZ(A)ANTHRACENE	206	186	90	250	0.2J	16,000	5	100	--	--	NA
BENZO(A)PYRENE	206	192	93	**260**	0.28J	**14,000**	5	**100**	76	2	62
BENZO(B)FLUORANTHENE	206	192	93	240	0.31J	**14,000**	5	100	5	0	620
BENZO(G,H,I)PERYLENE	206	197	96	170	0.3J	5,600	5	28	--	--	NA
BENZO(K)FLUORANTHENE	206	173	84	180	0.24J	**10,000**	5	100	7	0	380
CHRYSENE	206	188	91	270	0.25J	**16,000**	5	100	3	0	3,800
DIBENZ(A,H)ANTHRACENE	206	154	75	35	0.27J	1,400 J	5	100	--	--	NA
FLUORANTHENE	206	184	89	610	0.5J	38,000	5	100	0	0	2,300,000
FLUORENE	205	131	64	150	0.19J	14,000 J	5	100	0	0	2,700,000
INDENO(1,2,3-CD)PYRENE	206	181	88	190	0.34J	**5,900**	5	100	7	0	620
NAPHTHALENE	206	171	83	90	0.26J	13,000 J	5	100	0	0	56,000
PHENANTHRENE	206	178	86	560	0.34J	48,000 J	5	100	--	--	NA
PYRENE	206	192	93	540	0.93J	34,000	5	29	0	0	2,300,000
PCBs/Pesticides (µg/kg)											
4,4'-DDD	28	0	0	--	--	--	3.4	69	0	0	2,400
4,4'-DDE	28	0	0	--	--	--	3.4	140	0	0	1,700
4,4'-DDT	28	2	7	11	7.4J	15	3.4	13	0	0	1,700
ALDRIN	28	0	0	--	--	--	1.8	10	0	0	29
ALPHA-BHC	28	0	0	--	--	--	1.8	50	--	--	NA
ALPHA-CHLORDANE	21	1	5	2	1.9J	1.9 J	1.8	2.5	0	0	1,600
AROCLOR-1016	30	0	0	--	--	--	13	49	0	0	3,900
AROCLOR-1221	30	0	0	--	--	--	25	100	0	0	220
AROCLOR-1232	30	0	0	--	--	--	13	49	0	0	220
AROCLOR-1242	30	0	0	--	--	--	13	49	0	0	220
AROCLOR-1248	30	0	0	--	--	--	13	49	0	0	220
AROCLOR-1254	30	0	0	--	--	--	13	49	0	0	220

TABLE 5-17: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

All Soil Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
PCBs/Pesticides (µg/kg)											
AROCLOR-1260	30	6	20	**900**	9.5 J	**5,200**	13	49	1	0	220
BETA-BHC	28	0	0	--	--	--	1.8	7.1	--	--	NA
CHLORDANE	7	1	14	180	180	180	31	67	0	0	1,600
DELTA-BHC	28	0	0	--	--	--	1.8	36	--	--	NA
DIELDRIN	28	0	0	--	--	--	3.4	**110**	0	1	30
ENDOSULFAN I	28	0	0	--	--	--	1.8	200	0	0	370,000
ENDOSULFAN II	28	0	0	--	--	--	3.4	1,500	0	0	370,000
ENDOSULFAN SULFATE	28	0	0	--	--	--	3.4	14	--	--	NA
ENDRIN	28	0	0	--	--	--	3.4	560	0	0	18,000
ENDRIN ALDEHYDE	28	0	0	--	--	--	3.4	180	--	--	NA
ENDRIN KETONE	21	0	0	--	--	--	3.4	4.9	--	--	NA
GAMMA-BHC (LINDANE)	28	1	4	2	1.9 J	1.9 J	1.8	77	--	--	NA
GAMMA-CHLORDANE	21	1	5	2	2 J	2 J	1.8	2.5	0	0	1,600
HEPTACHLOR	28	0	0	--	--	--	1.8	**130**	0	2	110
HEPTACHLOR EPOXIDE	28	0	0	--	--	--	1.8	35	0	0	53
METHOXYCHLOR	28	0	0	--	--	--	18	71	0	0	310,000
TOXAPHENE	28	0	0	--	--	--	63	250	0	0	440
Total Petroleum Hydrocarbons (mg/kg)											
DIESEL RANGE ORGANICS	92	40	43	74	2	380	1	57	--	--	NA
GASOLINE RANGE ORGANICS	90	39	43	950	0.3 J	19,700 J	0.5	50	--	--	NA
JET FUEL	2	0	0	--	--	--	10	10	--	--	NA
JP5 RANGE ORGANICS	33	0	0	--	--	--	10	87	--	--	NA
MOTOR OIL RANGE ORGANICS	81	48	59	430	24 J	3,700 J	10	87	--	--	NA
Metals (mg/kg)											
ALUMINUM	61	61	100	10,300	3,130	30,100	0	0	0	0	76,000
ANTIMONY	67	13	19	1.5	0.41	5 J	0.44	25	0	0	31.0
ARSENIC	61	35	57	**6.9**	**0.82**	**31.5**	0.22	**12**	35	25	0.39
BARIUM	61	60	98	89.8	15.4	1,060	24	24	0	0	5,400
BERYLLIUM	67	17	25	0.66	0.28	1.9	0.01	25	0	0	150

TABLE 5-17: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES (Continued)

All Soil Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Residential PRG
Metals (mg/kg)											
CADMIUM	67	17	25	0.37	0.028	1.3 J	0.026	25	0	0	37.0
CALCIUM	61	61	100	6,130	1,000	110,000	0	0	--	--	NA
CHROMIUM	67	61	91	39.1	7	105	1.9	25	0	0	210
COBALT	61	49	80	8.2	3.2 J	19	3.3	6.2	0	0	900
COPPER	67	56	84	36.1	3	243	3.4	25	0	0	3,100
IRON	61	61	100	18,300	6,210	**44,000**	0	0	18	0	23,000
LEAD	117	97	83	**350**	1.4	**13,700 J**	0.17	25	18	0	150
MAGNESIUM	61	61	100	4,650	1,760	14,400	0	0	--	--	NA
MANGANESE	61	61	100	226	57.7	891	0	0	0	0	1,800
MERCURY	52	23	44	2.9	0.07	**52.5**	0.05	**25**	1	6	23.0
MOLYBDENUM	61	3	5	0.42	0.34	0.48	0.11	8.2	0	0	390
NICKEL	67	65	97	37.1	3.9	107	3.5	25	0	0	1,600
POTASSIUM	61	61	100	1,390	213 J	4,840	0	0	--	--	NA
SELENIUM	61	2	3	0.89	0.82	0.95	0.49	16	0	0	390
SILVER	67	3	4	1.0	0.24 J	2.4 J	0.058	25	0	0	390
SODIUM	61	44	72	1,490	66.3 J	6,440	39	693	--	--	NA
THALLIUM	61	8	13	3.3	1.1	4.6	0.11	**16**	0	15	5.2
TITANIUM	15	15	100	389	280	670	0	0	--	--	NA
VANADIUM	61	61	100	32.9	14	86.3	0	0	0	0	550
ZINC	67	64	96	91.8	14.2	1,260	25	25	0	0	23,000

TABLE 5-17: SITE 3 STATISTICAL SUMMARY OF SOIL ANALYSES

All Soil Investigations

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

--	Not detected
BHC	Benzene Hexachloride
DDD	Dichlorodiphenyldichloroethane
DDE	Dichlorodiphenyldichloroethene
DDT	Dichlorodiphenyltrichloroethane
J	Estimated value
mg/kg	Milligrams per kilogram
NA	No PRG available
PCB	Polychlorinated biphenyl
PRG	Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)
µg/kg	Micrograms per kilogram

TABLE 5-18: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Lead Plume Investigation

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Non-detected Concentration	Maximum Non-detected Concentration	Number of Detections Over PRG	Number of Non-detects Over PRG	Tap Water PRG	MCL
Metals (µg/L)												
Filtered												
LEAD	14	8	57	115	4.2	210	0.65	8.9	--	--	NA	15.0

TABLE 5-18: SITE 3 STATISTICAL SUMMARY OF GROUNDWATER ANALYSES

Lead Plume Investigation

Remedial Investigation Report for CERCLA Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

NOTES:

Bold denotes values exceeding the PRG

MCL Maximum Contaminant Level

NA No criteria available

PRG Preliminary Remediation Goal, U.S. Environmental Protection Agency, Region 9 or Cal-modified (2002)

µg/L Micrograms per liter

TABLE 5-19: SITE 3 STATISTICAL SUMMARY OF SOIL GAS SAMPLING ANALYSES

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Analyte	Number of Samples Analyzed	Number of Detections	Percent of Detections	Average of Detected Concentration	Minimum Detected Concentration	Maximum Detected Concentration	Minimum Detection Limit	Maximum Detection Limit	Number of Detection Limits Over PRG	Region 9 PRG
Volatile Organic Compounds in Soil Gas (µg/m³)										
1,1,1-TRICHLOROETHANE	12	0	0	--	--	--	29.01	8169.11	3	2,300
1,1,2,2-TETRACHLOROETHANE	12	0	0	--	--	--	36.5	10277.98	12	0.033
1,1,2-TRICHLOROETHANE	12	0	0	--	--	--	29.01	8169.11	12	0.12
1,1-DICHLOROETHANE	12	0	0	--	--	--	21.52	6059.63	12	1.2*
1,1-DICHLOROETHENE	12	0	0	--	--	--	21.08	5935.94	8	210
1,2-DICHLOROBENZENE	12	0	0	--	--	--	31.97	9001.27	9	210
1,2-DICHLOROETHANE	12	0	0	--	--	--	21.52	6059.63	12	0.074
1,3-DICHLOROBENZENE	12	0	0	--	--	--	31.97	9001.27	12	3.3
1,4-DICHLOROBENZENE	12	0	0	--	--	--	31.97	9001.27	12	0.31
BENZENE	12	8	67	83179.45	29.75	212642.4	40.24	1062.14	12	0.23
CHLOROETHANE	12	0	0	--	--	--	14.03	3950.76	12	2.3
CHLOROMETHANE	12	0	0	--	--	--	10.98	3091.66	12	1.1
CIS-1,2-DICHLOROETHENE	12	0	0	--	--	--	21.08	5935.94	10	37
ETHYLBENZENE	12	5	42	985.46	60.12	2857.88	226.42	6501.12	12	1.7
M-XYLENE	12	6	50	1148.29	99.04	2763.82	226.42	6501.12	11	110
O-XYLENE	12	0	0	--	--	--	23.09	6501.12	9	110
TETRACHLOROETHENE	12	0	0	--	--	--	36.28	10215.52	12	0.67
TOLUENE	12	5	42	3759.16	138.38	16354.05	196.5	5642.02	8	400
TRANS-1,2-DICHLOROETHENE	12	0	0	--	--	--	21.08	5935.94	9	73
TRICHLOROETHENE	12	0	0	--	--	--	28.58	8045.42	12	0.017
VINYL CHLORIDE	12	0	0	--	--	--	13.59	3827.07	12	0.11

Notes:

*	PRG is the "Cal modified PRG"
µg/kg	Micrograms per Kilogram
mg/kg	Milligrams per Kilogram
µg/m3)	Micrograms per cubic meter
NA	Constituent not listed in the PRG Index
No PRG Listed	Constituent listed in PRG Index, no PRG indicated
PRG	Preliminary remediation goal
Bold	Exceeds PRG

TABLE 5-20: SITE 3 SOIL NATURE AND EXTENT EVALUATION SUMMARY

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

ANALYTICAL GROUP CHEMICAL	EXCEEDS SCREENING LEVELS?	USED BY THE NAVY AT THE SITE?	RISK DRIVER?	BACKGROUND METAL?[1]	RELATED TO SITE ACTIVITY?	DATA GAP?
VOCs						
Benzene	Yes	Yes	No	--	Yes	No
Ethylbenzene	Yes	Yes	No	--	Yes	No
Metals						
Arsenic	Yes	No	Yes	Yes	No	No
Iron	Yes	No	Yes	No	No	No
Lead	Yes	No	Yes	No	Yes	Yes
Mercury	Yes	No	No	Yes		
PCBs						
Aroclor-1260	Yes		Yes	--	Yes	No
PAHs						
Benzo[a]anthracene	Yes	No	Yes	--	Yes	No
Benzo(a)pyrene	Yes	No	Yes	--	Yes	No
Benzo[b]fluoranthene	Yes	No	Yes	--	Yes	No
Dibenzo(a,h)anthracene	Yes	No	Yes	--	Yes	No

Notes:

-- Does not apply to these chemicals

1 Based on the background comparison

TABLE 5-21: SITE 3 HHRA SUMMARY FOR SOIL

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Exposure Scenarios			Site 3[a]	
			Cancer	Non-cancer[b]
Residential				
0-2 feet bgs	RME	Adult	4E-05	0.8
		Child	4E-05	5
		Total Risk	7E-05	NA
	CTE	Adult	4E-06	0.3
		Child	1E-05	2
		Total Risk	1E-05	NA
0-8 feet bgs	RME	Adult	8E-05	1
		Child	7E-05	6
		Total Risk	1E-04	NA
	CTE	Adult	8E-06	1
		Child	3E-05	3
		Total Risk	4E-05	NA
Commercial/Industrial				
0-2 feet bgs	RME	Adult	1E-05	0.4
		Total Risk	1E-05	NA
	CTE		7E-07	0.1
		Total Risk	7E-07	NA
0-8 feet bgs	RME	Adult	2E-05	0.5
		Total Risk	2E-05	NA
	CTE	Adult	1E-06	0.2
		Total Risk	1E-06	NA
Construction Worker				
0-2 feet bgs	RME	Adult	1E-06	1
		Total Risk	1E-06	NA
	CTE	Adult	1E-07	0.08
		Total Risk	1E-07	NA
0-8 feet bgs	RME	Adult	2E-06	1
		Total Risk	2E-06	NA
	CTE	Adult	2E-07	0.1
		Total Risk	2E-07	NA

Notes:

a	Includes risk from background
b	Non-cancer risk does not include risk from lead
CTE	Central tendency exposure
bgs	Below ground surface
RME	Reasonable maximum exposure
NA	Not applicable

TABLE 5-22: SITE 3 HHRA REASONABLE MAXIMUM EXPOSURE COMMERCIAL/INDUSTRIAL RISK DRIVERS FOR SURFACE SOIL

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Commercial/Industrial Scenario

Receptor: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient for a Child [a,b]				
				Ingestion	Dermal	Produce	Inhalation	Exposure Routes Total	Ingestion	Dermal	Produce	Inhalation	Exposure Routes Total
Surface Soil (0-2 ft bgs)	Soil	Surface Soil/ Particulates	Aroclor-1260	1.E-06	1.E-06	--	--	3.E-06	--	--	--	--	--
			Arsenic	4.E-06	8.E-07	--	--	5.E-06	--	--	--	--	--
			Benzo(a)pyrene	2.E-06	2.E-06	--	--	4.E-06	--	--	--	--	--
			Chemical Total	8.E-06	4.E-06	0.E+00	0.E+00	1.E-05					
		Exposure Point Total						1.E-05					
	Vapors	Vapors from Surface Soil to Outdoor Air	No volatile COPCs										
			Chemical Total										
		Exposure Point Total											
Medium Total								1.E-05					

Notes:

--	Not applicable or available
a	Based RME assumptions
b	Non-cancer risk does not include risk from lead
COPC	Chemical of potential concern
ft bgs	Feet below ground surface

TABLE 5-23: SITE 3 HHRA REASONABLE MAXIMUM EXPOSURE COMMERCIAL/INDUSTRIAL RISK DRIVERS FOR SUBSURFACE SOIL

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Commercial/Industrial Scenario

Receptor: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient for Child[a,b]				
				Ingestion	Dermal	Produce	Inhalation	Exposure Routes Total	Ingestion	Dermal	Produce	Inhalation	Exposure Routes Total
Subsurface Soil (0-8 ft bgs)	Soil	Surface Soil/ Particulates	Aroclor-1260	7.E-07	7.E-07	--	--	1.E-06	--	--	--	--	--
			Arsenic	1.E-05	2.E-06	--	--	1.E-05	--	--	--	--	--
			Benzo(a)pyrene	3.E-06	2.E-06	--	--	5.E-06	--	--	--	--	--
			Chemical Total	1.E-05	5.E-06	0.E+00	0.E+00	2.E-05					
		Exposure Point Total						2.E-05					
	Vapors	Vapors from Surface Soil to Outdoor Air	No volatile COPCs	--	--	--	--	--	--	--	--	--	--
				--	--	--	--	--	--	--	--	--	--
			Chemical Total										
		Exposure Point Total											
Medium Total								2.E-05					

Notes:

--	Not applicable or not available
a	Based RME assumptions
b	Non-canncer risk does not include risk from lead
COPC	Chemical of potential concern
ft bgs	Feet below ground surface

TABLE 5-24: SITE 3 HHRA REASONABLE MAXIMUM EXPOSURE RESIDENTIAL RISK DRIVERS FOR SURFACE SOIL

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Residential Scenario
Receptor: Adult/Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient for a Child [a,b]				
				Ingestion	Dermal	Produce	Inhalation	Exposure Routes Total	Ingestion	Dermal	Produce	Inhalation	Exposure Routes Total
Surface Soil (0-2 ft bgs)	Soil	Surface Soil/ Particulates	Arsenic	2.E-05	2.E-06	3.E-05	1.E-08	5.E-05	1	0.5	0.008	0.00005	2
			Aroclor-1260	6.E-06	3.E-06	1.E-07	5.E-10	9.E-06					
			Benzo(a)anthracene	1.E-06	5.E-07	3.E-08	9.E-11	2.E-06					
			Dibenzo(a,h) anthracene	8.E-07	3.E-07	8.E-09	6.E-11	1.E-06					
			Benzo(a)pyrene	1.E-05	4.E-06	2.E-07	7.E-10	1.E-05					
			Chemical Total	4.E-05	9.E-06	3.E-05	1.E-08	7.E-05	1	0.5	0.008	0.00005	2
		Exposure Point Total						7.E-05					2
	Vapors	Vapors from Surface Soil to Outdoor Air	No volatile COPCs										
			Chemical Total					0.E+00					0
		Exposure Point Total						0.E+00					0
Medium Total								7.E-05					2

Notes:

--	Not applicable or available
a	Based RME assumptions
b	Non-cancer risk does not include risk from lead
COPC	Chemical of potential concern
ft bgs	Feet below ground surface

TABLE 5-25: SITE 3 HHRA REASONABLE MAXIMUM EXPOSURE RESIDENTIAL RISK DRIVERS FOR SUBSURFACE SOIL

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Residential Scenario

Receptor: Adult/Child

Medium	Exposure Medium	Exposure Point	Chemical of Potential Concern	Carcinogenic Risk					Non-Carcinogenic Hazard Quotient for Child[a,b]				
				Ingestion	Dermal	Produce	Inhalation	Exposure Routes Total	Ingestion	Dermal	Produce	Inhalation	Exposure Routes Total
Subsurface Soil (0-8 ft bgs)	Soil	Surface Soil/ Particulates	Aroclor-1260	3.E-06	1.E-06	7.E-08	2.E-10						
			Arsenic	5.E-05	4.E-06	6.E-05	3.E-08		0.8	0.1	0.3		1
			Benzene	2.E-07	5.E-09								
			Benzo(a)anthracene	1.E-06	4.E-07	2.E-08	7.E-11	1.E-06					
			Benzo(a)pyrene	1.E-05	5.E-06	2.E-07	9.E-10	2.E-05					
			Benzo(b)fluoranthene	9.E-07	4.E-07	2.E-08	6.E-11	1.E-06					
			Dibenzo(a,h)anthracene	8.E-07	3.E-07	8.E-09	6.E-11	1.E-06					
			Iron						1.1	0.0	0.0		1
			Chemical Total	7.E-05	1.E-05	6.E-05	3.E-08	2.E-05	1.9	0.1	0.3		2
		Exposure Point Total						2.E-05					2
	Vapors	Vapors from Surface Soil to Outdoor Air	Benzene				3.E-06	3.E-06					
			Chemical Total				3.E-06	3.E-06					0
		Exposure Point Total						3.E-06					0
Medium Total								3.E-05					2

Notes:

--	Not applicable or not available
a	Based RME assumptions
b	Non-canncer risk does not include risk from lead
COPC	Chemical of potential concern
ft bgs	Feet below ground surface

TABLE 5-26: SITE 3 CHEMICALS OF POTENTIAL ECOLOGICAL CONCERN FOR SOIL

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

Chemical	Screening Evaluation	
	Rejected	Retained
Metals (mg/kg)		
Aluminum	--	X
Antimony	CSB	--
Arsenic	--	X
Barium	--	X
Beryllium	CSB	--
Cadmium	CSB	--
Calcium	EN	--
Chromium	CSB	--
Cobalt	--	X
Copper	--	X
Iron	EN	--
Lead	--	X
Magnesium	EN	--
Manganese	--	X
Mercury	CSB	--
Nickel	CSB	--
Potassium	EN	--
Silver	CSB	--
Sodium	EN	--
Titanium	CSB	--
Vanadium	--	X
Zinc	--	X
Semivolatile Organic Compounds (mg/kg)		
2-Methylnaphthalene	--	X
Acenaphthene	--	X
Acenaphthylene	--	X
Anthracene	--	X
Benzo(a)anthracene	--	X
Benzo(a)pyrene	--	X
Benzo(b)fluoranthene	--	X
Benzo(g,h,i)perylene	--	X
Benzo(k)fluoranthene	--	X
Chrysene	--	X
Dibenz(a,h)anthracene	--	X
Fluoranthene	--	X
Fluorene	--	X
Indeno(1,2,3-cd)pyrene	--	X
Naphthalene	--	X
Phenanthrene	--	X
Pyrene	--	X
Volatile Organic Compounds (mg/kg)		
2-Butanone	--	X
Acetone	--	X
Benzene	--	X
Carbon disulfide	--	X
Ethylbenzene	--	X
Toluene	--	X
Xylene (Total)	--	X

Notes:

CSB	Concentrations within statistical background
EN	Essential nutrient
mg/kg	*Milligram per kilogram*

TABLE 5-27: SITE 3 ERA SOIL HAZARD

Remedial Investigation Report for Sites 3, 4, 11, and 21, Alameda Point, Alameda, California

COPEC	Measurement Endpoints							
	Reproductive or Physiological Impacts to the California Ground Squirrel		Reproductive or Physiological Impacts to the Alameda Song Sparrow		Reproductive or Physiological Impacts to the American Robin		Reproductive or Physiological Impacts to the Red-tailed Hawk	
	Hazard Quotient							
	High TRV	Low TRV	High TRV	Low TRV	High TRV	Low TRV	High TRV	Low TRV
Aluminum	1.09E+02[a]	1.09E+03[a]	1.07E-01[a]	9.68E-01[a]	3.39E-01[a]	3.09E+00[a]	1.77E+00[a]	1.62E+01[a]
Arsenic	1.66E-01[b]	8.62E-01[b]	4.73E-04[a]	1.89E-03[a]	1.53E-03[a]	6.12E-03[a]	6.32E-03[a]	2.53E-02[a]
Barium	2.40E-01[b]	7.59E-01[b]	6.83E-02[a]	1.37E-01[a]	2.18E-01[a]	4.36E-01[a]	1.03E+00[a]	2.07E-01[a]
Cobalt	1.70E-02[a]	2.10E-01[a]	QE	QE	QE	QE	QE	QE
Copper	1.90E-02[b]	3.75E+00[b]	1.56E-03[b]	2.07E-02[b]	5.08E-03[b]	6.77E-02[b]	1.02E-02[b]	1.36E-01[b]
Lead	3.45E-01[b]	8.63E+00[a]	3.13E-02[a]	2.28E+02[a]	1.04E-01[a]	7.63E+02[a]	2.52E-01[a]	1.84E+03[a]
Alternate Lead TRV[c]	NA	NA	NA	6.29E-01[a]	NA	2.10E+00[a]	NA	5.07E+00[a]
Manganese	4.55E-01[a]	4.57E+00[a]	2.85E-03[a]	2.85E-02[a]	9.05E-03[a]	9.05E-02[a]	4.46E-02[a]	4.46E-01[a]
Vanadium	4.46E-01[a]	4.46E+00[a]	2.82E-04[b]	2.82E-03[b]	8.97E-04[b]	8.97E-03[b]	4.68E-02[b]	4.68E-02[b]
Zinc	3.91E-02[a]	1.02E+01[b]	3.02E-03[b]	3.02E-02[b]	9.51E-03[b]	9.51E-02[b]	5.41E-02[b]	5.41E-01[b]
HMW PAHs	7.51E-03[b]	1.88E-01[b]	QE	QE	QE	QE	QE	QE
LMW PAHs	1.18E-04[a]	3.47E-04[a]	QE	QE	QE	QE	QE	QE
2-Butanone	QE	QE	QE	QE	QE	QE	QE	QE
Acetone	1.60E-03[b]	7.96E-03[b]	QE	QE	QE	QE	QE	QE
Benzene	3.43E-02[a]	3.43E-01[a]	QE	QE	QE	QE	QE	QE
Carbon disulfide	QE	QE	QE	QE	QE	QE	QE	QE
Ethylbenzene	QE	QE	QE	QE	QE	QE	QE	QE
Toluene	2.37E+00[a]	2.37E+01[a]	QE	QE	QE	QE	QE	QE
Xylene	6.62E+02[a]	8.15E+02[a]	QE	QE	QE	QE	QE	QE

Notes:

[a] TRV based on an reproductive effect.

[b] TRV based on an physiological effect.

[c] The Navy-established avian low TRV of 0.014 mg/kg-day is considered highly conservative. For comparison purposes, an *alternate, less conservative* low TRV of 3.85 mg/kg-day was used (Sample and others 1996).

COPEC Chemical of potential ecological concern

HMW High molecular weight

LMW Low molecular weight

mg/kg-day Milligram per kilogram per day

NA *Not applicable*

PAH Polynuclear aromatic hydrocarbon

QE No TRV developed for Ecological COPC and endpoint, qualitative evaluation only

TRV Toxicity reference value

Reference:

Sample, B.E., and others. 1996. "Toxicological Benchmarks for Wildlife: 1996 Revision." *ES/ER/TM-86/R3. Oak Ridge National Laboratory. Oak Ridge, Tennessee.*

6.0 REMEDIAL INVESTIGATION FOR SITE 4 – BUILDING 360 (AIRCRAFT ENGINE FACILITY)

This section describes the history and setting of Site 4 (Section 6.1), environmental investigations conducted at Site 4 (Section 6.2), the remedial investigation (RI) results (Section 6.3), and the RI conclusions and recommendations (Section 6.4). The RI results section addresses only soil at Site 4. This section does not address the groundwater located beneath Site 4, because this plume also lies beneath all of the other OU-2B sites, and thus it required a separate report section (see Section 9.0) to fully address OU-wide groundwater contaminants in terms of their nature and extent, fate and transport, and risks. Appendices E, F, and G, respectively, present the complete background comparison, human health risk assessment (HHRA), and ecological risk assessment (ERA) for OU-2B.

6.1 HISTORY AND SETTING

Site 4 is in the eastern portion of Alameda Point between OU-2A to the north, Main Street to the east, West Atlantic Avenue to the south, and Viking Street to the west (see Figure 6-1). Site 4 measures about 14 acres, is rectangular, and consists of EBS Parcels 133, 143, and 144, and Subparcels 134A and 164A. Site 4 is currently considered an intensively developed area and is bordered by intensively developed areas (see Figure 2-6). Typical urban wildlife, such as the California ground squirrel, scrub jays, and American robins, have been observed in the intensively developed areas; however, they are less frequently observed in the landscaped/developed areas because less foraging habitat is available. Feral cats also are found in the intensively developed area (U.S. Department of the Navy [Navy] 1999).

Section 6.1.1 discusses the history of Site 4, including specific details about physical features and activities associated with hazardous waste generation or past disposal and storage practices, and Section 6.1.2 discusses future land use at Site 4.

6.1.1 History

Site 4 is approximately 65 percent open space consisting of paved vehicle parking areas, storage areas, and a large landscaped sports field along the eastern border. Site 4 is known as Building 360, the Aircraft Engine Facility. Building 360 was constructed in 1953 and operated as an aircraft engine and airframe overhaul facility. Operations ceased in April 1997 (International Technology [IT] 2001a). A number of structures were associated with Building 360 include aboveground storage tanks (AST) 360A through E; tiered permit (TP)-06 and TP-09; non-permitted Resource Conservation and Recovery Act (RCRA) unit M-06; industrial waste treatment plant (IWTP) 360; non-permitted RCRA unit Naval Aviation Depot (NADEP) generator accumulation points (GAP) 01, 49A, 50 through 52, 55 and 56, 57A, 58, and 80; and oil-water separator (OWS)-360.

Other site features include Buildings 163A, 372, 170 (Partial), 372, 414, and 610; Structure 552 and former Structure 587; and former Buildings 107, 201 through 223, 226, 227, 230 through

232, 236, 237, 240 through 260, and 360A through D. Structures associated with Building 163A include underground storage tank (UST) 163-1, NADEP GAP 59, and OWS-163. Structures associated with Building 372 include former AST 372, former USTs 372-1 and 372-2, non-permitted RCRA unit NADEP GAP 61, solid waste management unit (SWMU) 372, and OWS-372A and OWS-372B (A structure named "OWS-414" was identified in error in the 1994 EBS report as being located on the west side of Building 414 at the washdown area [ERM-West 1994]; however, a review of aerial photographs for Building 414 confirmed that no OWS was located west of Building 414). Sitewide features include underground fuel lines, storm sewers, open space, and an old railroad track that ran through Site 4. The history and description of each of these physical features is summarized below and were developed based on review of various reports and historical aerial photographs.

Site 4 also includes portions of corrective action area (CAA) 3C, CAA 4A, CAA 4B, CAA 4C, and CAA 13 because petroleum hydrocarbons were detected in groundwater at these locations.

Building 360. Building 360 is an 180,000-square foot (ft^2), concrete-floored aircraft engine and airframe overhaul facility built in 1953 that is currently vacant. Prior to its construction, much of its footprint area was used as a large storage area. Permits were issued for dryers, spray booths, degreasers, abrasive blasting, finishing, solvent and chemical cleaning, dipping (in tanks), a magnetic particle inspection machine, an oven, halon fire protection, and an electrophonetic coating process. The building also housed multiple process shops, including a blast shop, a cleaning shop, an engine and airframe components paint shop, machine shops, a welding shop, a plating shop, a sheet metal/metal spray/rubber room, a gear box repair shop, a turbine repair area, a shop for assembling and disassembling engines, and a nondestructive testing investigation area. Many shops had chemical storage cabinets as well as documented hazardous wastes, including halogenated and nonhalogenated organics, scrap metals, paints, petroleum products, corrosives, and fuel. The cleaning shop had several 1,300-gallon metal tanks that held cleaning solutions. The turbine repair area had a hot oil bath. A concrete-lined utility tunnel runs beneath Building 360 in a north-south direction. Multiple stains, spills, and etched concrete areas have been documented at the building. In 1980, soil was removed from beneath the cleaning shop; since then, plastic sheeting and absorbent material have been placed on the bare ground to contain leaks (Environmental Resources Management-West, Inc. [ERM-West] 1994).

Former OWS-360. OWS-360 was associated with Building 360 and was located on the northeastern side of the building prior to its removal. Few details are available regarding this former OWS (Tetra Tech EM Inc. [Tetra Tech] 2001c).

ASTs 360A through E. ASTs 360A through C are 2,500-gallon tanks located on the northern side of Building 360 that were used to store diesel fuel. ASTs 360D and E are 3,000-gallon tanks located on the western side of Building 360. AST 360D formerly stored compressed air or steam, and AST 360E formerly stored paint or paint seal wastes. These tanks are currently in good or fair condition, inactive, and empty (IT 2001a, Tetra Tech 2003a). The environmental baseline survey (EBS) report indicated concrete secondary containment (ERM-West 1994).

AST 360E is a non-permitted RCRA unit also known as NADEP GAP 53 (Tetra Tech 2003b). A Navy recommendation for no further action (NFA) at AST 360D is included in Appendix I.

TP-06. TP-06 was a RCRA Part A-permitted unit consisting of a container located in the rinse shop of Building 360; it was designed to rinse empty acid bottles, but it was never used. In a letter to DTSC dated May 11, 1998, the Navy requested the termination of the permit for this unit. The unit was properly closed in accordance with regulations governing the closure of conditionally exempt units. Department of Toxic Substances Control (DTSC) and the Alameda County Health Care Services Agency were notified in May 1998. TP-06 is closed, and NFA is required at this unit (Tetra Tech 2003a).

TP-09. TP-09 was a RCRA Part A-permitted unit consisting of a pH adjustment unit, Unit No. M-1304154, which is no longer in use. The unit is associated with Building 360. The Navy submitted a tiered permit application for this conditionally authorized unit on August 8, 1994. DTSC and the Alameda County Health Care Services Agency were notified of its proper closure in accordance with regulations in April 1997. TP-09 is closed, and NFA is required at this unit (Tetra Tech 2003a).

Non-permitted RCRA Unit M-06. Unit M-06 consisted of a portable, 15-gallon solvent distillation unit located in the cleaning and blast shops of Building 360. The unit was associated with aircraft engine and airframe overhaul facility activities. PD-680 cleaning solvent, paint, thinner, and acetone were formerly stored at the unit. According to the RCRA facility assessment (RFA) report, a RCRA facility investigation (RFI) was not recommended for M-06 because the unit was located inside and on a concrete floor (DTSC 1992). According to the EBS report, M-06 is in Parcel 143 of Zone 22 (IT 2001a). During a May 2002 site visit, a faded red and white rectangle painted on the floor of Building 360 was all that remained of M-06. The surrounding areas were vacant except for minor debris such as paper trash, film spools, and other trash. An expansion joint in the concrete was visible at the unit location, and no stains were apparent within the joint. A Navy recommendation for NFA is included in Appendix I.

IWTP 360. IWTP 360 is a RCRA Part A-permitted plant located west of Building 414 that treated industrial and nonindustrial wastes from Building 360, including hexavalent chromium and cyanide wastewater from the Building 360 plating shop and hot and cold rinse tank water from the Building 360 cleaning shop. The IWTP tanks have been removed, and the sumps were excavated. Soil and groundwater samples were collected next to these features and the waste lines running to the former sumps (Tetra Tech 2003b). Closure of this permitted facility is being addressed by the DTSC Permitting Branch under the RCRA Program.

NADEP GAP 01. NADEP GAP 01 was a non-permitted RCRA unit associated with Building 360. Aluminum oxides were stored at the GAP. According to the EBS report, NADEP GAP 01 was located in Parcel 143 of Zone 22 on concrete inside Building 360 (IT 2001a). The capacity of the GAP was unknown. The EBS report concluded that NADEP GAP 01 did not require further investigation because it was paved and no staining was observed by inspectors (IT 2001a). NADEP GAP 01 was not included in the RFA. During a May 2002 site visit, faded markings painted on the concrete inside of Building 360 were all that remained of

NADEP GAP 01. Some machinery remained in surrounding areas. No staining, corrosion, or obvious pathway through the floor was apparent in the vicinity of the former unit. A Navy recommendation for NFA is included in Appendix I.

NADEP GAP 49A. NADEP GAP 49A was a non-permitted RCRA unit associated with Building 360. Aluminum oxide and ammonium chloride were stored at the GAP, which consisted of storage drums (capacity unknown) on a wooden pallet. The area measured approximately 5 by 5 feet and was located inside Building 360. According to the RFA report, NADEP GAP 49A exhibited a low potential for releases to soil, groundwater, and surface water because it was located indoor on a concrete floor (DTSC 1992). According to the EBS report, NADEP GAP 49A is in Parcel 143 of Zone 22 (IT 2001a). During a May 2002 site visit, a faded red and white rectangle painted on the floor of Building 360 was all that remained of NADEP GAP 49A. The surrounding area was vacant. No staining, corrosion, or obvious pathway through the floor was apparent in the vicinity of the former unit. NFA is recommended for this unit (Tetra Tech 2003a). A Navy recommendation for NFA is included in Appendix I.

NADEP GAP 50. NADEP GAP 50 was a non-permitted RCRA unit associated with Building 360. Blasting grit (glass) and chromic acid were stored at the GAP, which consisted of storage drums (capacity unknown). The area measured approximately 10 by 5 feet and was located inside Building 360. According to the RFA report, the walls and floor around NADEP GAP 50 were stained. No cracks were apparent in the floor (DTSC 1992). According to the EBS report, NADEP GAP 50 is in Parcel 143 of Zone 22 (IT 2001a). No additional Phase 2 sampling was recommended (IT 2001a). During a May 2002 site visit, a faded red and white rectangle painted on the floor of Building 360 was all that remained of NADEP GAP 50. The surrounding area was vacant. Minor stains were visible on the wall behind the unit; however, no stains, corrosion, or obvious pathway through the floor were apparent. NFA is recommended for this unit (Tetra Tech 2003a). A Navy recommendation for NFA is included in Appendix I.

NADEP GAP 51. NADEP GAP 51 was a non-permitted RCRA unit associated with Building 360. Aerosol paint, epoxy paint, and thinner were stored at the GAP, which consisted of 55-gallon storage drums resting on wooden pallets with secondary containment. In addition, 55-gallon drums containing aerosol cans were placed on pallets without secondary containment. A yellow metal box on top of one of the drums enabled personnel to load wastes with minimum air emissions. The area measured approximately 12 by 5 feet and was located inside Building 360. According to the RFA report, NADEP GAP 51 exhibited a low potential for releases to soil, groundwater, and surface water because it was located indoor on a concrete floor (DTSC 1992). According to the EBS report, NADEP GAP 51 is in Parcel 143 of Zone 22 (IT 2001a). The EBS report incorrectly states that the site consisted of 5-gallon containers (IT 2001a). During a May 2002 site visit, a faded red and white rectangle painted on the floor of Building 360 was all that remained of NADEP GAP 51. The surrounding area was vacant. No staining, corrosion, or obvious pathway through the floor was apparent in the vicinity of the former GAP. Minor cracks were present on the floor, but this situation does not warrant further investigation. NFA is recommended for this unit (Tetra Tech 2003a). A Navy recommendation for NFA is included in Appendix I.

NADEP GAP 52. NADEP GAP 52 was a non-permitted RCRA unit associated with Building 360. Aerosol paint, lubrication and engine oils, JP-5, and PD-680 were stored at the GAP, which consisted of various containers up to 55-gallon storage drums (some containing aerosol cans). A polyethylene safety pack acted as secondary containment system for liquid waste. Solid waste was placed in a storage drum on a pallet outside of secondary containment. The unit measured approximately 5 by 10 feet and was located outside Building 360 in an area with no roof. According to the RFA report, the area was stained by grease, but no leaks could penetrate the concrete foundation, which was elevated approximately 4 feet (DTSC 1992). As a result, the RFA report concluded that NADEP GAP 52 exhibited a low potential for releases to soil, groundwater, and surface water because it was located on an elevated concrete foundation with secondary containment (DTSC 1992). According to the EBS report, NADEP GAP 52 is in Parcel 143 of Zone 22 (IT 2001a). No sampling was performed adjacent to the GAP (IT 2001a). During a May 2002 site visit, a faded red and white rectangle painted on an elevated foundation outside of Building 360 was all that remained of NADEP GAP 52. The surrounding area was vacant. Staining and corrosion were apparent at the former unit. Minor cracks were present in the concrete, but this situation does not warrant further investigation. A Navy recommendation for NFA is included in Appendix I.

NADEP GAPs 55 and 56. NADEP GAPs 55 and 56 were non-permitted RCRA units associated with Building 360. Blasting grit (glass and plastic) and aluminum oxide were stored at each GAP, which consisted of large polyethylene bags and 55-gallon storage drums on wooden pallets. The bags were taped directly beneath hoppers located inside Building 360. According to the RFA report, NADEP GAPs 55 and 56 exhibited low potential for releases to soil, groundwater, and surface water because they were located indoor on a concrete floor (DTSC 1992). According to the EBS report, NADEP GAPs 55 and 56 are in Parcel 143 of Zone 22 (IT 2001a). During a May 2002 site visit, faded, red and white rectangles marking hazardous waste containment areas painted on the floor of Building 360 were all that remained of NADEP GAPs 55 and 56. Hoppers were still present at NADEP GAP 56. No staining, corrosion, or obvious pathways through the floor were apparent in the vicinity of the former units. Small cracks were present on the floor at NADEP GAP 55, but this situation does not warrant further investigation. Navy recommendations for NFA are included in Appendix I.

NADEP GAP 57A. NADEP GAP 57A was a non-permitted RCRA unit associated with Building 360. Blasting grit (all media) was stored at the GAP, which consisted of metal bins located next to a storm sewer outside the northern wall of Building 360. The bins held full polyethylene bags of blasting grit. The site measured approximately 30 by 20 feet. According to the RFA report, the storm sewer location was a slight concern. No liquid waste was stored at the unit, the bins and bags were covered, and it was thought that waste leaching through the bins was improbable. The RFA report concluded that NADEP GAP 57A exhibited a low potential for releases to soil, groundwater, and surface water because it stored non-liquid hazardous wastes inside metal covered bins placed on concrete (DTSC 1992). According to the EBS report, NADEP GAP 57A is in Parcel 143 of Zone 22 (IT 2001a). During a May 2002 site visit, a faded red and white rectangle marking the former location of a hopper was all that remained of NADEP GAP 57A. The hopper was located in a corner near metal bins. The area was vacant. No staining, corrosion, or obvious pathway through the floor was apparent in the vicinity of the former unit. A Navy recommendation for NFA is included in Appendix I.

NADEP GAP 58. NADEP GAP 58 was a non-permitted RCRA unit associated with Building 360. Aerosol cans (Turco Dy-check developer and remover) were stored at the GAP, which consisted of 55-gallon storage drums containing aerosol cans and rags resting on wooden pallets. A white dome device on top of one of the drums enabled personnel to load wastes with minimal air emissions. The area measured approximately 5 by 5 feet and was located inside Building 360. According to the RFA report, NADEP GAP 58 exhibited a low potential for releases to soil, groundwater, and surface water because it stored non-liquid hazardous waste indoors on a concrete floor (DTSC 1992). According to the EBS report, NADEP GAP 58 is in Parcel 143 of Zone 22 (IT 2001a). During a May 2002 site visit, a faded red and white rectangle painted on the floor of Building 360 was all that remained of NADEP GAP 58. The surrounding areas were vacant. No staining, corrosion, or obvious pathway through the floor was apparent in the vicinity of the former unit. Minor cracks were present on the floor, but this situation does not warrant further investigation. A Navy recommendation for NFA is included in Appendix I.

NADEP GAP 80. NADEP GAP 80 was a non-permitted RCRA unit associated with Building 360. Cyanide was stored at the unit. According to the EBS report, NADEP GAP 80 was located in Parcel 143 of Zone 22 on concrete inside Building 360. The capacity of the unit is unknown. The EBS report documents one known release from this unit in October 1987 of approximately 180 gallons of cyanide solution into a sump (IT 2001a). The EBS report concluded that NADEP GAP 80 did not require further sampling because it was paved and no staining was observed by inspectors (IT 2001a). NADEP GAP 80 was not included in the RFA. During a May 2002 site visit, a faded red and white rectangle painted on concrete inside Building 360 was all that remained of NADEP GAP 80. Some machinery remained in surrounding areas. No staining, corrosion, or obvious pathway through the floor was apparent in the vicinity of the former unit. NFA is recommended for this unit (Tetra Tech 2003a). A Navy recommendation for NFA is included in Appendix I.

Building 163A. Building 163A, Equipment Maintenance (Plant Service A/C), was constructed in 1939 and measures 12,156 ft^2. As the first building on base, it was used for plant services, aircraft overhaul, and maintenance, and as a garage. The building housed a welding shop, calibration shop, machine shop, workbench, parts storage, and offices. Permits were formerly issued for abrasive blasting, freon recovery, and recycling. The concrete floor of the building is in poor condition, with considerable staining in the machine shop. Small quantities of chemicals were stored in cabinets in the welding shop, calibration shop, and machine shop areas. Hazardous materials associated with the building included metals, corrosives, petroleum products, halogenated and nonhalogenated organics, and paint (ERM-West 1994). The building is currently leased by ARRA. Pacific Coast Borax Works operated at Building 163A prior to Navy operations.

OWS-163. OWS-163 is located outside the southwest portion of Building 163A (Tetra Tech 2003a). Very little information is available on this OWS.

UST 163-1. This 2,000-gallon concrete tank associated with Building 163A contained fuel oil. It was removed in March 1995, followed by over-excavation (Tetra Tech 2003c). The SWMU

was integrated with the Total Petroleum Hydrocarbons (TPH) Program and is recommended for NFA by the Navy.

NADEP GAP 59. NADEP GAP 59 is a non-permitted RCRA unit associated with Building 163A and Shop 65132, a former aircraft overhaul and maintenance facility. Petroleum and lubrication oils were stored at the GAP, which consisted of 30- and 55-gallon storage drums containing liquid waste placed within secondary containment. In addition, drums were placed on wooden pallets without secondary containment. The area measured approximately 8 by 8 feet and was located outside between Buildings 163A and 414 next to a product storage area. According to the RFA report, NADEP GAP 59 exhibited a low potential for release to soil, groundwater, and surface water because it was located outside of a flood plain, had secondary containment, and was located on flat asphalt pavement (DTSC 1992). NADEP GAP 59 was investigated as Target Area 5 located in Parcel 143 of Zone 22 of the EBS (IT 2001a). During a May 2002 site visit, a faded red and white rectangle painted on the asphalt pavement outside of Building 163A was all that remained of NADEP GAP 59. The current tenant of Building 163A stated that the area appeared clean before his use. The area is now bounded by a fence and used for vehicle maintenance and machinery storage.

Building 170 (Partial). A portion of this building is located in the southwestern portion of Site 4; the remainder of the building is located in Site 11. Building 170 was used for aviation equipment storage and packaging. The 92,000-ft^2 building was constructed in 1957. The northern portion of the building is currently being leased by Alameda Reuse and Redevelopment Authority (ARRA). It has a wood frame with a concrete floor and block walls to 5 feet, above which it has corrugated, galvanized, metal siding on steel framing. The building has a wood-framed roof and metal roofing. It temporarily stored (for up to 60 days) corrosion preventative compounds, packaging foam, cutting oil, lubrication oil, thinner, adhesives, resins, varnish, and spray and brush paints received from NADEP shops in Buildings 166, 167, 360, 397, 398, and 530, which are located outside of Site 4 (ERM-West 1994).

Former Buildings 360A through D. Buildings 360A through D were constructed in 1985 with concrete floors. The 544-ft^2 engine component storage buildings were formerly used for aircraft maintenance and spare storage. Buildings 360C and 360D each held blasting media for approximately 1 month (ERM-West 1994). The exact location of these buildings is unknown.

Building 372. Building 372, the turbo propeller test cell, was built in 1953. This 18,500-ft^2, concrete-floored building was used as an engine testing facility. Plant services for aircraft overhaul also were conducted. Aircraft oil was stored in the building. Lubrication oil systems were located on the first and second floors. Fueling and oiling systems and a control room associated with test two cells also were also located on the second floor. A minor fuel leak is also believed to have occurred in the jet fuel supply line between Buildings 372 and 375. Testing performed in June 1991, indicated a minor leak somewhere in the line; it was subsequently blocked and emptied. The exact location of the release and its amount were not determined (PRC Environmental Management, Inc. [PRC] and James M. Montgomery (JMM) 1992). A 6,000-gallon UST located at the northwest corner of the building was used to collect gear oil and had overflowed in the past. Historically, a polychlorinated biphenyl (PCB)-

containing fluid was sprayed along the perimeter of the building for weed control. Paint, nonhalogenated organics, petroleum products, and metals are also associated with this building. Permits were formerly issued for turbine engine testing and solvent cleaning. Considerable staining was present in each test cell and on the second floor (ERM-West 1994).

OWS-372A and OWS-372B. Located west of Building 372, OWS-372A has a capacity of 3,750 gallons. OWS 372B, located outside the main entrance to Building 372, collects runoff. No other details are available about these units (IT 2001a; ERM-West 1994). A Navy recommendation for NFA at OWS 372B is included in Appendix I.

Former AST 372. AST 372 was located west of Building 372 and stored an unknown quantity of fuel and fuel oil (Tetra Tech 2003b).

Former USTs 372-1 and 372–2 (Area of Concern [AOC] 372/SWMU 372). USTs 372-1 and 372-2 had capacities of 6,000 and 1,000 gallons, respectively. The USTs were associated with Building 372 and stored JP-5, and lubricating and waste oils, respectively. The USTs were referred to as AOC 372. SWMU 372 is the JP-5 fuel spill in Building 372, as discussed in the paragraph below. During removal of USTs 372-1, UST 372-2 was discovered directly beneath it; however, UST 372-2 was left in place. UST 372-1 was reportedly in good condition, with no holes. Soil staining was not observed in the excavation sidewalls; however, a petroleum hydrocarbon odor was noted and floating product was present on the groundwater. In September 1997, an investigation was conducted to evaluate the extent of a dissolved hydrocarbon plume near the USTs (Moju 1998). In 1998, UST 372-2 was removed. The UST was corroded but did not have holes. A tar-like product was observed in soil at the eastern end of the excavation (Tetra Tech 1999a).

SWMU 372. SWMU 372 was a petroleum fuel spill site at the southwestern corner of Building 372, an engine testing facility, in Test Cells 13 and 14. The SWMU resulted from an overflow of JP-5 from UST 372-2. Local groundwater is contaminated with petroleum fuel; however, chlorinated volatile organic compounds (VOC) were also detected, indicating a commingled plume.

NADEP GAP 61. It is a non-permitted RCRA GAP. DTSC recommended NFA for this SWMU in letter dated November 4, 1999 (DTSC 1999). The GAP was associated with Building 372 (currently vacant as of May 2002), the former engine testing facility (Tetra Tech 2003a). A Navy recommendation for NFA at OWS 372B is included in Appendix I.

Building 414. Building 414, a 1,640-ft^2 hazardous material storehouse, was built in 1957. The building has a concrete floor; the walls and roof are metal. The building was used by Navy Aircraft Rework Refit Facility to store paints, solvents, cleaners, strippers, caustics, and abrasive blast media (ERM-West 1994).

Building 610. Building 610 is located in the northeastern portion of Site 4. It is a high-speed grind shelter that was built in 1979 and is 1,800 ft^2 in size. The building was the former machine shop annex that had a reinforced concrete foundation (ERM-West 1994).

Structure 552. Structure 552, an electrical substation main, was built in 1973. This 2400-ft^2 concrete floor structure was the former primary electrical substation (ERM-West 1994).

Former Structure 587. Structure 587 was located in the northwestern portion of Site 4. It was the Industrial Waste Pump Station No. 2 (ERM-West 1994). During Phase I of the EBS, this building was not found. Records indicated that the building was demolished, but no demolition date is indicated (ERM-West 1994).

Former Building 107. Former Building 107 was a 5,591-ft^2 temporary cafeteria built in 1940. It is not known when this building was demolished or the exact location ERM-West 1994).

Former Buildings 201 through 223, 226, 227, 230 through 232, 236, 237, and 240 through 260. These buildings consisted of 50 Quonset huts. The EBS report identifies seven rows of barracks in the open space east of Building 360 in a 1947 aerial photograph (see Appendix K). Demolition was observed in a 1975 photograph, and the open space was vacant in 1981. Former Buildings 201 through 223, 226, 227, 230 through 232, 236, 237, and 240 through 260 were identified in the 1947 through the 1975 aerial photographs. It appears that the Quonset huts are being demolished in the 1975 photograph. The Quonset huts are not evident in the 1988 aerial photograph (Pacific Aerial Surveys, various years). Former Buildings 252 and 257 measured 1,002 ft^2 each and were Navy Exchange guest houses. Former Buildings 244, 245, 246, and 256 were listed as Quonset huts constructed in 1945 and measured 1,002 ft^2 each. Former Building 223, a 1,002-ft^2 temporary maintenance shop, was sold (ERM-West 1994).

Fuel Lines. Two fuel lines are located in the western half of Site 4. One enters the site south of Building 372 and then runs west into Site 11. Another fuel line enters Site 4 along the western border where the previously mentioned fuel line is and runs northeast to Site 3. The fuel lines located east of Seaplane Lagoon were removed by IT in 1998 (Tetra Tech 2000a).

Storm Sewers. Multiple segments of storm sewers exist at Site 4. Figure 6-2 shows the location and condition of storm sewers at Site 4. Most are in sound condition, and only a few have very limited areas of potential infiltration or are in an unknown condition (Tetra Tech 2000b). The storm sewers from Site 4 flow to Outfalls H and J in Seaplane Lagoon. Storm sewer lines are considered to be possible preferential pathways for contaminants in groundwater, if they are below (or likely below) the groundwater table and exhibit sags in areas where they intersect a groundwater contaminant plume. The sags indicate areas where the storm sewer appears to have settled. They do not necessarily indicate breaks in the line where groundwater could infiltrate into the storm sewer.

A short section of storm sewer is present in the northwest corner of Site 4. This line originates off Site 4 from the east, flows through manhole 6H, and then flows off the site to the southwest.

This section of line is below the groundwater table. Another line originates at the northwest corner of building 360 and flows along the western side of Building 360. This line is below the groundwater table. The first 50 feet of this section is reported to be significantly sagging. Part of this section also flows through a free product plume east of Building 372. This line was considered a 'high-priority line' by the storm sewer report for consideration of corrective action (Tetra Tech 2000b).

Building 360 is connected to the storm sewer system by a line on the east side of the building that originates north of Site 4. Manhole 6J-4 is located in Building 360 next to OWS-360. The line flows east and connects with the main line at manhole 6J-3. This section is above the groundwater table. The line then continues south and passes through catch basin 6J-1B; this section is located below the groundwater table. The line then flows off the site south (Tetra Tech 2000b). The portion of the storm sewer south of 6J-1B was considered a 'low-prioity line' by the storm sewer report for future corrective action.

Building 163A is connected to the storm sewer system near OWS-163. This line originates near the southwest corner of Building 163A at catch basin 4J-1B and flows northwest to catch basin 4J-1A. This section is likely below the groundwater table. The line then turns south and flows through Sites 19, 13, and 9 and eventually to Seaplane Lagoon; this section is located below the groundwater table (Tetra Tech 2000b).

Most of the storm sewer segments associated with Site 4 flow to Outfall J. All of Site 4 is located within the OU-wide groundwater plume; therefore, all sections of storm sewer either below or likely below the groundwater table are also located within this OU-wide plume (Tetra Tech 2000b).

Open Space. Site 4 is approximately 65 percent open space, consisting of paved vehicle parking areas, storage areas, and a large landscaped sports field along the eastern border. Historically, the open space areas in Site 4 have been used for fuel storage in both USTs and ASTs, hazardous materials storage lockers, motor gasoline (MOGAS) refueling, miscellaneous parts and equipment storage, aircraft engine storage (in the northeast portion), trash disposal dumpsters, and chemical storage on the south side of Building 163A, drum storage, and parking (ERM-West 1994).

The northwest portion of Site 4 has been paved and used for parking since the 1940s. The northeast portion of Site 4 has been used for parking and as a storage area. A fenced storage area with drums and bins is evident in a 1975 aerial photograph (see Appendix K). Two large ASTs also are visible in aerial photographs from 1957 and 1969 (see Appendix K). No information is available on the use or materials stored in these tanks. The northeast portion of Site 4 is presently a high voltage power transformer area (Pacific Aerial Surveys, various years).

The eastern portion of Site 4 was used for base housing up until the early 1970s. The open space around the housing units appears to have been grassy and landscaped. This area presently is used as a soccer field (Pacific Aerial Surveys, various years).

The western portion of Site 4 is paved and has been used for parking and storage. In a 1988 aerial photograph, a large fenced storage area is visible north of Building 170. Drums, boxes, bins, and spent fuel cylinders are all evident in this area, and the ground is heavily stained. The western portion of Site 4 currently is used for parking (Pacific Aerial Surveys, various years).

6.1.2 Future Land Use

According to the "NAS Alameda Community Reuse Plan" (EDAW 1996), Site 4 is located in the Inner Harbor with the northern portion in the Civic Core (see Figure 2-2). Most likely reuses include residential and commercial or light industrial activities (EDAW 1996).

The Civic Core is planned to consist of approximately 334 acres for reuse in the central part of Alameda Point. This area currently supports a wide range of use patterns, including the central open space mall, the shoreline along Oakland Inner Harbor, and the East Gate entrance station. Residential, recreational, administrative, warehouse, and industrial structures also are located in this reuse area (Navy 1999c).

The Civic Core is planned to be developed as a mixed-use "flex zone" to accommodate a range of uses based on the near-term reuse of existing facilities, with redevelopment and in-fill changes, additions, and demolition occurring over time. Development in the mixed-use zone would emphasize international business and commerce, research and development facilities, support of commercial uses, and residential use. Potential civic uses include public recreation facilities, a museum, a library, a teen activity center, a civic auditorium, civic office space, a place of worship, and meeting spaces (Navy 1999c).

The Inner Harbor area is planned to consist of 120 acres in the southeastern corner of Alameda Point. This area is to be reused for a combination of industrial, open space, and community support uses. The most prominent land use features are large-scale industrial buildings and shoreline recreational areas (Navy 1999c). The southern shoreline in the Inner Harbor area would be developed as a 36-acre regional park. The East Bay Regional Park District would develop and manage the regional park, which would include opportunities for shoreline access and recreation, beach uses, a dog run, and other forms of recreation. The existing marina, recreation center, breakwater, boathouse, and cafe may be renovated, and the existing recreational vehicle (RV) park would be expanded to 13 acres to accommodate about 135 RVs for short-term camping. The intent of the regional park would be to provide public services for tourists, visitors, and residents. The regional park would be included in the Bay Trail System (Navy 1999c).

6.2 SITE 4 ENVIRONMENTAL INVESTIGATIONS

This section describes each environmental investigation conducted at Site 4 under the Installation Restoration (IR) Program, which included investigations conducted under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the EBS, and the TPH Program. No data were collected under the RCRA Program. Tables 6-1 and 6-2 summarize the

soil and soil gas and groundwater samples collected by investigation and the types of analyses conducted. Sampling locations are shown on Figures 6-3 through 6-9 and are categorized by investigation. Results for each of the investigations are summarized in Tables 6-3 through 6-19. The summaries are organized according to medium and analytical group and include the following information: (1) the number and percent of detections of chemicals; (2) the average, minimum, and maximum detected concentrations; (3) minimum and maximum detection limits for nondetected samples; and (4) whether the maximum detected concentrations or detection limits exceed Region 9 residential preliminary remediation goals (PRG) or California-modified PRGs (U.S. Environmental Protection Agency [EPA] 2002). PRGs and maximum contaminant levels (MCL) are provided in the tables for comparison purposes only.

The following sections summarize investigations conducted at Site 4 under CERCLA, the EBS, and the TPH Program.

6.2.1 Comprehensive Environmental Response, Compensation, and Liability Act Investigations

Investigations conducted at Site 4 in conformance with CERCLA included the Phase 1 and 2A investigation in 1990, the Phase 2B and 3 investigation in 1991, background and tidal influence studies and additional work at Sites 4 and 5 in 1992, a follow-on investigation in 1994, geochemical profiling to define chlorinated solvent plumes in 1997, a follow-on investigation in 1998, supplemental RI data gaps sampling for OU-1 and OU-2 in 2001, basewide groundwater monitoring in 2002 and 2003, and a basewide PAH investigation in 2003. Each investigation is summarized below.

Phase 1 and 2A Investigation, 1991. Sampling for this investigation was conducted in accordance with the RI and feasibility study (FS) sampling plan (Canonie 1989, 1990). The objectives of the work plan were to determine if soil and groundwater were contaminated in areas identified as potential waste release sites (Canonie 1989, 1990). Many potential waste release sites were first identified during the initial assessment study conducted in 1983 (Ecology & Environment [E&E] 1983) and a confirmation study conducted in 1985 (Wahler Associates 1985). Other potential release sites are identified in the RI/FS sampling plan (Canonie 1989, 1990). The waste release areas were generally identified as buildings, tank locations, and other areas where activities could have contaminated soil and groundwater. As more information has become available through additional investigations, site boundaries have expanded to encompass groundwater plumes.

This investigation was conducted to determine if surface spills or subsurface sewer leaks in areas other than the plating shop had impacted the Building 360 plating shop area. The investigation included drilling nine soil borings around Building 360 (sampling locations B360-1 through B360-9) and converting four of these boreholes into monitoring wells (sampling locations B360-1 through B360-4) (see Figure 6-3). A total of 108 soil samples were collected during this investigation. The soil samples were analyzed for VOCs, semivolatile organic compounds (SVOC), metals, cyanide, total organic carbon (TOC), pH, and cation exchange capacity (see Table 6-1). Groundwater samples were collected from wells MW360-1 through MW360-4 (see

Figure 6-3) and were analyzed for VOCs, SVOCs, metals, cyanide, TOC, pH, and specific conductance, and general chemical characteristics (PRC and Montgomery Watson [MW] 1993) (see Table 6-2).

Based on the investigation summary, 45 soil samples exhibited low concentrations of 15 VOCs (vinyl chloride, methylene chloride, acetone, 1,1-dichloroethene [DCE], 1,1-dichloroethane [DCA], 1,2-DCE, 2-butanone, 1,1,1-trichloroethane [TCA], trichloroethene [TCE], toluene, chlorobenzene, styrene, 1,3-dichlorobenzene, 1,2-dichlorobenzene, and 1,4-dichlorobenzene). Only one sample collected from the saturated zone exhibited total VOC concentrations above 1 milligram per kilogram (mg/kg). Thirteen SVOCs (1,2-dichlorobenzene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, bis[2-ethylhexyl]phthalate, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[a]pyrene [B(a)P], indeno[1,2,3-cd]pyrene, and benzo[g,h,i]perylene) were detected in various soil samples. However, none of these detections exhibited total concentrations above 10 mg/kg. Nine metals (arsenic, barium, calcium, chromium, cobalt, copper, nickel, sodium, and thallium) were detected at concentrations exceeding their respective 1991 PRGs. Cyanide was detected in 7 of 27 soil samples.

Seven VOCs (vinyl chloride, 1,1-DCE, 1,2-DCE, 1,1-DCA, 1,1,1-TCA, TCE, and methylene chloride) were detected in groundwater samples from four monitoring wells and two SVOCs (1,4-dichlorobenzene and 1,2-dichlorobenzene) were detected in groundwater samples from two monitoring wells. Twelve metals were detected in groundwater samples. Four of the 12 metals (arsenic, iron, potassium, and sodium) were detected at concentrations exceeding their respective 1991 PRGs. Cyanide was not detected in any groundwater samples.

Additional investigation was recommended inside of Building 360 to determine if it is a source of VOC contamination in groundwater and to determine the impact of petroleum hydrocarbons on soil (PRC and MW 1993).

Phase 2B and 3 Investigation, 1991. Sampling for this investigation was also conducted in accordance with the RI/FS sampling plan (Canonie 1989, 1990). This investigation was conducted to further address impacts to soil and groundwater around and under the plating shop in Building 360. The plating shop area was the only portion of Building 360 covered under this investigation. One surface soil sample each was collected from 20 sampling locations (sampling locations B04-01 through B04-20) using a hand auger (see Figure 6-3). The samples were collected from beneath the plating shop floor at 0 to 0.5 foot below ground surface (bgs) and analyzed for SVOCs, metals, and total cyanide (see Table 6-1). Temporary well screens were installed in nine of the auger holes (sampling locations B-04-01 through B-04-09) to collect grab groundwater samples that were analyzed for total recoverable petroleum hydrocarbons (TRPH), VOCs, SVOCs, metals, total cyanide, and general chemicals (see Figure 6-3 and Table 6-2). One sample of surface dust (W04-02) and one sample of material scraped from the floor (W04-01) were collected inside the plating shop and analyzed for metals (PRC and JMM 1992).

Based on the investigation summary, VOCs (fluoranthene, chrysene, bis[2-ehylehexyl]phthalate, and di-n-octyl-phthalate) were detected in soil samples. Although the reported concentrations

are considered valid detections, the source of these chemicals is unknown. Twenty soil samples were analyzed for metals (beryllium, chromium, copper, lead, mercury, and nickel). The highest concentrations of beryllium, chromium, copper, and lead were detected along the northeast side of the plating shop. Mercury was detected at its highest concentrations in samples from locations between a wet trench for the cyanide process line and a wet trench from one of the chromium process lines. Nickel was detected in samples from the southeastern and eastern portion of the plating shop (PRC and JMM 1992). Cyanide was detected in eight soil samples, with maximum concentrations of 16 and 19 mg/kg respectively.

Based on groundwater results, five VOCs (1,1,1-TCA, 1,1-DCA, 1,1-DCE, 1,2-DCE, and TCE) were detected in groundwater samples. 1,1,1-TCA was detected in five samples, 1,1-DCA was detected in eight samples, 1,1-DCE was detected in seven samples, and 1,2-DCE was detected in four samples. Similar to soil results, the highest concentrations of these chemicals were in samples from the northeast portion of the plating shop. The highest concentrations of metals were detected in one groundwater sample (PRC and JMM 1992). Cyanide was not detected in any groundwater samples during this investigation.

Sample results from a sample of material scraped from the floor and from a surface dust sample (W04-01 and W04-02) indicated that cadmium, hexavalent chromium, lead, mercury, nickel, and zinc were present on surfaces within the shop (PRC and JMM 1992). Total chromium was detected at a concentration of 839,000 micrograms per ft^2 ($\mu g/ft^2$) in the scrape sample and at 2,110 $\mu g/ft^2$ in the dust sample.

Additional Work at Sites 4 and 5, 1992. This follow-on work was based on the results of wipe and scrape sampling conducted under the Phase 2B and 3 investigation discussed above. High levels of hexavalent chromium and other metals in previous scrape samples led the Navy to close the plating shop pending additional chemical characterization of materials on surfaces in the shop. For this investigation, 12 wipe and scrape samples were collected from various locations within the plating shop. Four scrape samples were collected from the floor, four wipe samples were collected from the walls, and four wipe samples were collected from the rafters and other fixtures within the plating shop. Two additional samples were collected at a later date. Analytical results for these samples confirmed previously detected concentrations of metals on surfaces within the plating shop. Additionally, cyanide was detected in all samples collected (PRC and MW 1995b). The results of this investigation were used to develop appropriate levels of protection for personnel conducting future work in the plating shop. Figure 6-4 shows the sampling locations for wipe samples.

Scrape and wipe sample results indicated that elevated concentrations of metals (barium, cadmium, chromium, including hexavalent chromium, copper, nickel, lead, silver, and zinc) and cyanide are present on the interior surfaces of the plating shop (PRC and MW 1995b). Interference from other metals positively biased the hexavalent chromium results; therefore, hexavalent chromium may not be present at the concentrations reported by the laboratory. Cyanide was detected in samples W04-03 through W04-06 at concentrations ranging from 2.2 to 11.4 mg/kg, in samples W04-07 and W04-09 at concentrations ranging from 5.04 to 8.21 $\mu g/ft^2$

(PRC and MW 1995b), and in samples W04-13 and W04-14 at 118 and 59.2 $\mu g/ft^2$ (PRC and MW 1995b).

Follow-on Investigation, 1994. The purpose of this investigation was to fill data gaps from previous investigations by collecting additional chemical, geological, and hydrogeological data to further characterize the nature and extent of soil and groundwater contamination at Site 4. Field activities included performing cone penetrometer tests (CPT), collecting soil samples, installing monitoring wells, and collecting sediment samples from the storm drains. Results were reported in two separate data summary reports (PRC and MW 1995a, 1996).

The objective of the CPTs was to evaluate lithology and hydrogeologic characteristics below 15 feet bgs and to identify the second water-bearing zone (SWBZ). Four CPT locations (CPT-S04-01 through CPT-S04-04) were driven near monitoring wells where elevated concentrations of VOCs were detected. No soil samples were collected during the CPT (PRC and MW 1996). Additional field work and sampling was conducted at Site 4 to further assess the nature and extent of chemicals discovered in soil and groundwater. The additional work consisted of advancing one CPT location (CPT-S04-05) and three soil borings (B04-43 through B04-45) (see Figure 6-3). The additional CPT was conducted to further evaluate lithology and hydrogeologic characteristics in the vicinity of Site 4. Nine soil samples were collected from the three borings and submitted for chemical analysis. Samples were collected from the surface, 2.5 feet bgs, and 5 feet bgs (PRC and MW 1995a). See Table 6-1 for a list of analyses conducted.

Four shallow soil borings (B04-21 through B04-24) and three shallow monitoring wells (M04-05 through M04-07) were installed around Building 360 to assess whether soil had been impacted by petroleum hydrocarbons or other chemicals related to activities within the building (see Figure 6-3). Twenty-one soil samples were collected from around the building and submitted for chemical analysis. Twenty-four additional soil samples were collected from deep borings D04-01 to D04-03 and analyzed for VOCs to assess the possible presence of TCE in deeper soil samples. Soil samples were collected from depths up to 100 feet bgs (PRC and MW 1996). See Table 6-2 for a list of analyses conducted.

Seventeen shallow soil borings were advanced beneath the floor of Building 360. Soil samples were collected from locations B04-25 through B04-40 at depths of 0 and 2.5 feet bgs at each location. At borings B04-41 and B04-42, an additional soil sample was collected from 5 feet bgs. Thirty-eight samples were collected and submitted for chemical analysis (PRC and MW 1996). See Table 6-1 for a list of analyses conducted.

Groundwater samples were collected from 7 shallow wells, 3 deep wells, and 18 direct-push locations around the outside of Building 360. Monitoring wells MW360-1 through MW360-4 were installed during a previous investigation. During this investigation, three new shallow monitoring wells (MW04-05 through MW04-07) were installed to further characterize the lateral extent of VOCs and metals detected in groundwater in the first water-bearing zone (FWBZ). One well was located 80 feet northwest of the plating shop, and another was located 250 feet northwest of the first well location. The third well was installed 200 feet east of the building.

Three deep monitoring wells (D04-01 to D04-03) were installed around the building to monitor the groundwater quality in the SWBZ (PRC and MW 1996). See Table 6-2 for a list of analyses conducted.

Three storm sewer sediment samples were also collected from three locations at Site 4 and analyzed for SVOCs, petroleum hydrocarbons, cyanide, and metals. Sample location NPS-S04-01 is located in storm drain catch basin 6J-3, which is downgradient of OWS-360 (see Figure 6-3). This location was selected to assess the potential discharge from floor drains in Building 360. Sample location NPS-S04-02 is located in catch basin 5J-3F, which is downgradient of building discharges. Sample location NPS-S04-03 is located in catch basin 5J-3A, which is downgradient of discharges from the western part of Building 360 (PRC and MW 1996).

According to the data summary report (PRC and MW 1996), low concentrations of VOCs were detected in soil samples from 17 of 24 sampling locations beneath and around the perimeter of Building 360. Low concentrations of polynuclear aromatic hydrocarbons (PAH) were detected in 13 soil samples; these results were consistent with past studies where slightly elevated concentrations of PAHs were detected in one soil boring northeast of Building 360. During this investigation, cyanide was detected at lower concentrations in samples from locations beneath the plating shop than previous investigations. Several metals concentrations exceeded the 1996 residential PRGs in soil samples from locations southeast and northwest of Building 360 and below the plating shop. Additionally, elevated concentrations of TPH exceeded criteria in soil samples from locations west of and beneath Building 360. Cyanide was detected in three soil samples collected from locations outside of Building 360 during previous investigations; however, cyanide was not detected in soil samples collected from locations outside the building during this investigation.

Groundwater results indicated VOCs were detected in samples from the FWBZ in each of the seven monitoring wells. Groundwater samples collected east and northwest of Building 360 exhibited TCE and 1,2-DCE at concentrations exceeding 1996 tap water PRGs (PRC and MW 1996). Additionally, high concentrations of vinyl chloride were detected in groundwater samples from locations east of the building, and 1,1,1-TCA, 1,1-DCA, and 1,1-DCE were detected in groundwater samples from locations west of the building. Low concentrations of PAHs were detected in groundwater samples from five of seven locations around the building. Metals concentrations exceeded their respective 1996 tap water PRGs in groundwater samples from five locations around the building, and cyanide was detected only once in a groundwater sample from a location west of Building 360. Cyanide was detected at one location beneath the southern portion of the building and in the boring beneath the plating shop. Cyanide was detected at much lower concentrations during this investigation than previous investigations.

Geochemical Profiling to Define Chlorinated Solvent Plumes, 1997. Past investigations identified the presence of chlorinated solvents in subsurface soil near both the northeast and northwest corners of Building 360. This investigation was conducted in April 1997 because of the lack of monitoring well data from inside the building under the foundation (OGISO Environmental 1997). The objective was to define the vertical and lateral

extent of chlorinated solvents under and around the northern portion of Building 360. At 11 sampling locations (S04-2D-C, S04-3D-B, S04-5C-A, S04-5C-B, S04-4C-A, S04-2D-A, S04-1D-A, S04-3C-A, S04-3C-B, S04-3D-A, and S04-2D-B) along eight transect lines (three running northwest and five running southeast), grab groundwater samples were collected from various depths down to 25 feet bgs (see Figure 6-3). The grab groundwater samples were analyzed for VOCs (see Table 6-2). Three soil cores were also advanced at two locations inside the building and one location adjacent to the north end of the building (OGISO Environmental 1997).

The screening-level data evaluated for this investigation exhibited elevated concentrations of volatile aromatic hydrocarbons (benzene, toluene, ethylbenzene, and xylenes [BTEX]) and 12 volatile chlorinated hydrocarbons. A contaminant plume was identified and appeared to be migrating northwest, away from Site 4, and extended from 5.5 feet to 23 feet deep (OGISO Environmental 1997).

Storm Sewer Removal, 1997. This removal action was conducted to address elevated concentrations of organic and inorganic chemicals in sediments and debris within the storm sewer system (Tetra Tech 2000d). The Navy Public Works Center removed sediments and debris within the catch basins and manholes of the storm sewer system using a vacuum (Phase I of the removal action), and IT removed sediments and debris in the storm sewer system lines and associated manholes (Phase II of the removal action). Following the removal action, closed-circuit television was used to survey the cleaned lines. Site-specific objectives of this removal action were to reduce the potential for sediments and debris in the storm sewer system, which contain elevated concentrations of VOCs, SVOCs, pesticides, heavy metals, and fuel-related hydrocarbons, from affecting nearby human populations, animals, the food chain, drinking water supplies, and sensitive ecosystems.

Site 4 contains storm sewer lines that are part of Subsystem J. Chemicals were not detected in the storm sewers at Site 4. According to the storm sewer summary report (Tetra Tech 2000d), Site 4 had one high priority storm sewer line (5J-3F to 5J-3H); this line had a small crack within a groundwater plume. One section (5J-3B to 5J-3C) also had a groundwater plume intersecting a sag in the storm sewer line (Tetra Tech 2000d). Storm sewer lines were characterized as low priority and non-priority (in good condition needing NFA).

Follow-on Investigation, 1998. The purpose of this investigation was to further characterize groundwater plumes, monitor plume movement at Site 4, and support modeling of the effects of the natural attenuation processes. The investigation included quarterly groundwater sampling and a tidal influence study. Four quarters of groundwater monitoring and sampling were conducted at wells M03-05, M04-05, M04-06, M04-07, MW360-1, MW360-2, MW360-3, and MW360-4 are screened in the FWBZ (see Figure 6-3). Two wells sampled during the first two quarters (D04-02, D04-03) and one additional well sampled the last two quarters (D04-01) are screened in the SWBZ. Samples from these wells were analyzed for VOCs (see Table 6-2) in order to monitor the extent of the solvent plume in groundwater, which is located primarily in the central and northwestern portions of the site (Tetra Tech 1997c).

The tidal influence study was conducted over 24 hours and included 23 wells. Five wells studied are located in the southeast corner of Alameda Point, one well (M04-06) was associated with Site 4. Monitoring well M04-06 (screened from 3.5 to13.5 feet bgs) was not considered to be tidally influenced. One deep monitoring well (D11-01) located approximately 300 feet west of Site 4 was monitored. Monitoring well D11-01 (screened from 50 to 60 feet bgs) had the largest tidal fluctuation in the southeast portion of Alameda Point, with 1.1 feet of elevation change during the 24-hour study period (Tetra Tech 1997a). This monitoring well is located approximately 585 feet from Seaplane Lagoon and had an estimated lag time for tidal response of 1 hour.

In addition, an investigation was conducted to further assess the nature and extent of the chlorinated solvent plume investigated during the geochemical profiling to define chlorinated solvent plumes investigation in 1997. Discrete groundwater samples were collected at several different intervals using direct-push methods (see Figure 6-3). A total of 111 groundwater samples were collected at depths ranging from 5.5 to 60 feet bgs from 51 locations within the Site 4 boundary, and a total of 191 groundwater samples were collected from 96 locations throughout OU-2B (Tetra Tech 1998c). See Tables 6-2 for a list of analyses conducted.

During this investigation, three distinct plumes were defined at Site 4 (Tetra Tech 1997c). The plume originating from the northwest corner of Building 360 was the focus of the geochemical profiling investigation in 1997 (OGISO Environmental 1997). The lateral and vertical extent of this plume was further defined during this investigation. A second area of contamination was discovered at the western side of Building 360 and is the likely source of a plume extending west. A third area of contamination is near the southwest corner of Building 160 (Site 22) and appeared to be the source of a plume extending west toward Seaplane Lagoon.

According to the data summary report (Tetra Tech 1997c), one or more organic compounds (toluene, TCE, 1,1,1-TCA, 1,1-DCA, 1,1-DCE, 1,2-DCB, 1,4-DCB, chlorobenzene, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride) exceeded their respective 1998 MCLs in samples collected during groundwater monitoring. Additionally, the metals arsenic, barium, cadmium, chromium, cobalt, copper, manganese, mercury, molybdenum, nickel, selenium, silver, vanadium, and zinc were detected in groundwater samples (Tetra Tech 1998c).

Supplemental Remedial Investigation Data Gaps Sampling, 2001. The specific objectives of data gaps sampling at Site 4 were to (1) delineate chlorinated VOCs plumes in groundwater, (2) investigate the storm sewer pathways, and (3) collect soil gas samples to support vapor intrusion modeling in the HHRA (Tetra Tech 2001b, 2002). As the data for Site 4 were evaluated, it became apparent that characterization of the lateral limits of the groundwater contamination plume was insufficient. Subsequently, the Navy implemented the data gaps sampling program in 2001 and 2002. The overall objectives of data gaps sampling at Site 4 were to investigate TPH in groundwater at Building 372. To evaluate this plume, 24 soil samples and 181 groundwater samples were collected using direct-push techniques (see Figure 6-5). Also, 50 groundwater samples were collected from monitoring wells, 7 groundwater samples were collected from a vacuum excavation activity, and 1 groundwater sample was collected from a manhole. Eighteen soil gas samples also were collected and analyzed for VOCs to support vapor

intrusion modeling in the HHRA. Soil samples collected using direct-push techniques were analyzed for chromium, cyanide, metals, and TPH (see Table 6-1). Groundwater samples collected using direct-push techniques were analyzed for various chemicals, including chromium, dissolved gases, metals, SVOCs, TPH, and VOCs (see Table 6-2). Groundwater samples collected from monitoring wells were analyzed for PAHs, SVOCs, TPH, and VOCs. Figure 6-5 shows the sampling locations, and Tables 6-1 and 6-2 list the soil and groundwater samples and analyses performed.

According to the report (Tetra Tech 2002), limited investigation of soil and groundwater was performed for TPH and BTEX contamination. Chlorinated VOCs were detected to the west of Building 360. The lateral and vertical boundary of the VOC and TPH plumes was defined, except for one location in the northeast corner of Site 4. One step-out sample was recommended at this location. Because TPH plumes are commingled with chlorinated VOCs, a recommendation was made to manage the TPH investigation under the CERCLA program (Tetra Tech 2002).

During the storm sewer investigation, samples of storm sewer bedding material were collected from locations S04-DGS-VE01 and S04-DGS-DP22, in the northwest corner of Site 4, and from locations S04-DGS-VE02 and S04-DGS-DP23, on the southwest corner of Building 360 (Tetra Tech 2002). The objective of this investigation was to assess the potential for contaminated groundwater to infiltrate into the storm sewers and to evaluate the bedding material as a potential pathway. Storm sewer samples were analyzed for VOCs and TPH. Samples were analyzed at an on-site mobile laboratory. Results indicated diesel and gasoline range organics, 1,2-DCE, and TCE were present in samples from location S04-DGS-VE01 and TPH quantified as motor oil was present in samples from location S04-DGS-VE02. An evaluation of the geotechnical data for the bedding materials at location S04-DGS-VE01 showed that the soil bedding material is more permeable than the offset soil sample at S04-DGS-DP22. However, it was determined that storm sewer bedding materials near sampling location S04-DGS-VE02 are less permeable than the offset soil sample at S04-DGS-DP23.

Basewide Groundwater Monitoring, 2002. Twelve shallow wells (372-MW1, M03-05, M03-06, M03-10, M03-12, M03-13, M04-05, M04-06, MW360-1, MW360-2, MW360-3, and MW360-4) and three deep wells (D04-01, D04-02, and D04-03) were sampled at Site 4 (see Figure 6-3). The shallow monitoring wells were sampled quarterly for VOCs and TPH and semi-annually for dissolved metals and general chemistry parameters (see Table 6-2). The deep monitoring wells were sampled semi-annually for VOCs, TPH, dissolved metals, and general chemistry parameters (Shaw Environmental & Infrastructure, Inc. [Shaw] 2003a).

According to the groundwater monitoring report, chemical concentrations exceeded their respective 2002 MCLs in samples from most of the monitoring wells at Site 4 during all four investigations (Shaw 2003a). The following organic and inorganic chemicals were detected exceeding MCLs: 1,1-DCA, 1,1-DCE, 1,2-DCE (cis), 1,2-DCE (trans), 1,4-dichlorobenzene, benzene, TCE, vinyl chloride, total TPH, aluminum, arsenic, chromium, lead, nickel, selenium, and thallium (Shaw 2003a).

According to the summer 2002 investigation, VOCs and TPH were present at concentrations exceeding MCLs in groundwater samples from various locations in the FWBZ. Aluminum and selenium were detected in the FWBZ and SWBZ. TCE, DCE, 1,2-DCE (cis), and vinyl chloride were detected in the upper zone of the Merritt Sand, west and downgradient of Building 360. VOCs were detected at concentrations below the MCLs in samples from wells installed in the upper sandy zone along the eastern perimeter. Winter results concluded that the distribution of TCE in the upper fine-grained zone of the Merritt Sand is similar in distribution between the summer and winter investigations of 2002 (Shaw 2003a).

When compared to the winter data, TCE concentrations in various wells have fluctuated. Groundwater elevations from the wells show a general increase between the winter 2002 and the spring 2003 sampling events. Since the fall 2002 sampling event, 1,1-DCE concentrations varied in response to water level.

Basewide PAH Investigation, 2003. The objective of this investigation was to collect sufficient PAH data to calculate EPCs for risk assessments at CERCLA sites (Bechtel Corporation [Bechtel]). Historical PAH data collected at each CERCLA site were used to estimate the mean and standard deviation of B(a)P equivalents to determine the appropriate number of samples to collect at each site. At Site 4, 76 soil borings were advanced using direct-push sample methods (see Figure 6-6). Samples were collected separately from 0 to 0.5, 0.5 to 2, 2 to 4, and 4 to 8 feet bgs (Bechtel 2003).

According to the technical memorandum (Bechtel 2002), PAHs (expressed as B[a]P equivalents) were detected at concentrations below the 2002 residential soil PRG of 62 micrograms per kilogram (µg/kg) in 83 percent of the samples and concentrations were less than 620 µg/kg in 99 percent of the samples (Bechtel 2002). Data quality was determined to be adequate.

Pilot Studies, 2002. In 2002, several pilot studies were scheduled to be completed near Building 360 at Site 4, to support a DNAPL and dissolved source removal action and a chemical oxidation pilot test at Plume 4-1 (IT 2002; Shaw 2004a). Each study was intended to evaluate the removal of chlorinated solvent contamination from soil and groundwater at Site 4. Prior to implementation of these pilot studies, several samples were collected to delineate chlorinated solvent contamination in groundwater north of Building 360 and west of Building 360 (see Figure 6-7). See Table 6-2 for a list of samples and analyses performed. Removal actions have been suspended because of unfavorable results during pilot studies. The pilot studies found that insitu chemical oxidation was not effective in removing the chlorinated solvent contamination.

6.2.2 Environmental Baseline Survey Investigations

Site 4 is within Zone 22 and comprises Parcels 133, 143, and 144 and Subparcels 134A and 164A (see Figure 6-1). As a part of the EBS, these parcels were investigated under the Phase 1 and Phase 2A and 2B investigations and a storm sewer investigation (IT 2001a). Each EBS-related investigation is discussed below.

Phase I. The primary objectives of this phase were to identify Community Environmental Response Facilitation Act of 1992 (CERFA)-eligible parcels and to classify parcels into area types in accordance with the "BRAC Cleanup Plan." Based on this evaluation, Parcel 133, Sub-parcel 134A (formerly Parcel 134), Parcel 144, and Sub-parcel 164A (formerly Parcel 164) were designated as BRAC Area Type 7, which indicates "areas that are unevaluated or that require further action." Parcels classified in this category have data gaps that require additional inspection, site history investigation, and/or sampling. Parcel 143 was designated as BRAC Area Type 6, which includes "areas of known contamination where required response actions have not yet been implemented" (ERM-West 1994). Based on these BRAC designations, Site 4 was included in EBS Phases 2A and 2B.

Phases 2A and 2B. Sub-parcel 134A and Parcels 143 and 144 were investigated and sampled during Phase 2A of the EBS (IT 2001a). As specified in the parcel evaluation plan and the Zone 22 plan, no samples were collected from Parcel 133 or Sub-parcel 164A.

Phase 2A at Sub-parcel 134A included sampling at five target areas. Target area 1 consisted of Building 372 and included the collection of six surface (0 to 1 feet bgs) and six subsurface (1 to 14 feet bgs) soil samples (see Figure 6-8) to address possible contamination related to surface staining. Target area 2 was west of Building 372 where subsurface fuel leaks were known to be associated with an underground fuel line. Three subsurface soil samples were collected from 0 to 1 feet bgs to evaluate the effectiveness of a previous removal action. Target area 3 included Building 163A, a welding and machine shop located north of Building 372. Sampling consisted of the collection of three surface (0 to 1 feet bgs) and three subsurface (1 to 14 feet bgs) soil samples near areas of staining. Target area 4 was in a portion of Building 414 where two subsurface soil samples were collected to address staining associated with past hazardous waste storage (mainly paints and solvents). Target area 5 was at NADEP GAP 59 between Buildings 163A and 414. Samples were collected using direct-push techniques and analyzed for herbicides, oil and grease, PCBs, pesticides, SVOCs, metals, TPH, and VOCs.

Phase 2A sampling at Parcel 144 included the collection of samples from target area one. Five soil gas samples, four subsurface samples, and four surface samples were collected (see Figure 6-8), which consists of open space. One subsurface soil sample was collected from the sanitary sewer corridor (IT 2001a).

During Phase 2B, Subparcel 134A was the only parcel sampled within Site 4. Six surface soil, 18 subsurface soil, and 12 direct-push soil samples were collected at locations across the subparcel (IT 2001a) (see Figure 6-8).

During these investigations, metals were detected at low concentrations except for arsenic and lead. Arsenic and lead were detected at concentrations exceeding background and the 1996 PRGs in samples from locations south of Building 163.

Sampling results for each investigation addressed the possible release of paint, paint stripper, and solvents within Building 414. Several SVOCs and two VOCs (acetone and methylene chloride) were detected at concentrations below their 1996 PRGs.

Several SVOCs were detected in soils at concentrations below their 1996 residential PRGs. However, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and indeno(1,2,3-cd)pyrene were detected at concentrations above their 1996. One soil sample exhibited one slightly elevated SVOC (B[a]P), and one soil sample exhibited elevated concentrations of four SVOCs.

Wipe samples were collected from equipment throughout Building 360 and analyzed for PCBs. The concentrations of PCBs from various types of equipment (capacitors, oil switches, and transformers) ranged from 14.6 to 4.2 parts per million (IT 2001). Six pesticides (4,4'-dichlorodiphenyldichloroethane [DDD], 4,4'-dichlorodiphenyldichloroethene [DDE], 4,4'-dichlorodiphenyltrichloroethane [DDT], alpha- and gammachlordane, and methoxychlor) and one PCB (Aroclor-1260) were detected at concentrations below their 1996 PRGs in samples from Parcel 144 (east of Building 160).

Low concentrations of TPH quantified as motor oil and diesel were detected in samples from Parcel 134A (west of Building 360). Motor oil was detected in several soil samples, indicating the potential vertical and lateral transport of oil.

These investigations concluded that there were no potential releases related to Building 552, north of Building 360 (Parcel 133) requiring further investigation. Therefore, no further EBS sampling was conducted in Parcel 133.

See Tables 6-1 and 6-2 for a list of analyses conducted.

Storm Sewer Investigation. A storm sewer investigation was conducted at the same time as the Phase 2A and 2B sampling activities (IT 2001a). This investigation was designed to address chemicals in and adjacent to the storm sewer lines. Ten sediment samples were collected directly from the storm sewer lines (see Figure 6-8). In addition, seven subsurface soil samples and seven confirmation samples were collected and analyzed for SVOCs, PCBs, organic lead, reactivity, oil and grease, TPH, and metals. See Table 6-1 for a list of all samples and analyses conducted.

According to the EBS investigation for Site 4 storm sewers, the work plan for storm sewers sampling did not require the collection of sewer corridor samples for Parcels 133, 144, and 164 (IT 2001).

VOCs were detected at concentrations below the 1996 PRGs in soil samples collected from locations west of Building 360. TPH quantified as motor oil, diesel, and gasoline were also detected in soil samples. However, TCE and 1,1-DCE were detected at concentrations exceeding their 1996 PRGs in samples from Building 360. Additionally, samples collected from Building 360 had moderate to high concentrations of oil and grease, without TPH quantified as gasoline or motor oil. SVOCs were detected in soil samples at concentrations below the 1996 PRGs in except for B(a)P, which was detected in two samples. All reported metal concentrations were below background levels and 1996 PRGs (IT 2001).

6.2.3 Total Petroleum Hydrocarbon Program Investigations

After Alameda Point was identified for closure in September 1993, the TPH Program was implemented to decommission all USTs. As part of the program at Site 4, investigations were conducted near USTs 372-1 and 372-2 and within CAA 4B (Building 372) (see Figure 6-9).

An investigation was conducted near USTs 372-1 and 372-2 in 1995. TPH concentrations in groundwater samples collected near the USTs and south of Building 372 indicated that floating product might be present (ERM-West 1996). UST 372-1 was removed in April 1995 (Public Works Center 1996). During the removal, UST 372-2 was discovered directly beneath UST 372-1; however, it was left in place. UST 372-1 was reportedly in good condition, with no holes. Soil staining was not observed in the excavation sidewalls; however, a petroleum hydrocarbon odor was noted, and floating product was present on groundwater. In September 1997, an investigation was conducted to evaluate the extent of a dissolved hydrocarbon plume near the USTs (Moju 1998). In 1998, UST 372-2 was removed. The UST was corroded but did not have holes. A tar-like product was observed in the soil at the eastern end of the excavation (Tetra Tech 1999b).

Sampling was conducted at Site 4 under the TPH Program in relation to CAA 4 during the data gaps sampling investigation for the CAAs. The presence of floating free product was assessed at two sampling locations. Two soil borings were advanced to 10 feet bgs at locations CA04-01 and CA04-02. Piezometers were installed and checked 24 hours after installation. One groundwater sample was collected from each piezometer location. The groundwater samples had a hydrocarbon odor and a slight sheen. An extraction well located near the southwestern corner of Building 372 was checked for floating product. The groundwater in this well had a strong hydrocarbon odor and a thick sheen (Tetra Tech 2001b).

Two sampling locations, CA04-03 and CA04-04, were sampled to assess suspected soil source areas in Site 4. One soil boring was advanced to 6 feet bgs at location CA04-03. One soil sample was collected from this boring from 4.0 to 5.0 feet bgs. Another soil boring was advanced to 4.0 feet bgs at location CA04-04. Two soil samples were collected from this boring from 0.5 to 1.5 and 3.0 to 4.0 feet bgs. The soil borings did not have any visible staining or odors (Tetra Tech 2001b).

There is no active TPH removal actions occurring at this time in any corrective action area located in Site 4.

6.2.4 Resource Conservation Recovery Act Investigations

An RFA was conducted at Alameda Point in 1992 to identify SWMUs and AOCs and to evaluate the need and scope of a RFI (DTSC 1992). Thirteen SWMUs and AOCs were identified in the RFA; only one, AOC 372/SWMU 372 required an RFI (DTSC 1992). In addition, the Navy continues to conduct investigations related to the closure of RCRA-permitted IWTP 360. Investigation activities for the RFI and the closure of IWTP 360 are described below.

An RFI for Alameda Point was implemented through the coordination of existing environmental programs, namely CERCLA, the TPH Program, and as part of the EBS. Results of the RFA- and RFI-related activities at Alameda Point are summarized primarily in the EBS report. NADEP GAP 59 and AOC 372/SWMU 372 were investigated during the Phase II EBS site investigations (IT 2001a) and an inspection in 2002 (Tetra Tech 2003a). DTSC recommended NFA for NADEP GAP 61 (DTSC 1999). A Navy recommendation for NFA at NADEP GAP 61 is included in Appendix I.

IWTP 360 was taken out of service in 1994, and the Navy submitted a revised closure plan dated November 7, 1995, to implement decontamination and closure activities (E&E 1995). DTSC issued a letter dated October 30, 1996, to the Navy approving the closure plan, and the Navy submitted a closure summary report dated September 25, 1997. The closure summary report details decommissioning activities, including decontamination, demolition, and removal of all ASTs, equipment, and piping, and collection and analysis of concrete chip, liquid, and sludge samples from sumps, subsurface soil samples from seven locations, and rinse water samples. Wipe samples were not collected from the tanks because the tanks were triple-rinsed, dismantled, and removed for recycling. Concrete pad chip samples were not collected at that time but were collected later before follow-on preremoval soil sampling activities. Soil samples collected from next to the cadmium and chromium sumps contained cadmium and chromium at concentrations exceeding the California-modified residential PRGs (E&E 1997).

DTSC issued a letter on March 13, 1998, to the Navy stating that IWTP 360 could not be administratively considered closed because metals concentrations in the soil samples exceeded background concentrations. DTSC requested that the Navy perform additional investigation and excavation of soils at IWTP 360 (DTSC 1998). In response, the Navy prepared a field sampling investigation plan to further investigate the extent of cadmium and chromium contamination in soil near the cadmium and chromium sumps before the excavation of metals-impacted soil (IT 2000). The field sampling investigation plan was approved by DTSC in a letter dated August 25, 2000 (DTSC 2000). DTSC also indicated that the confirmation sampling locations were acceptable.

After subsurface soil samples near the concrete pad and sumps were collected, the Navy held a meeting with DTSC on October 10, 2000. The soil sampling data were reviewed, and the Navy and DTSC agreed on the extent of the soil excavation needed to satisfy RCRA closeout requirements for IWTP 360. Based on decisions made at that meeting, the concrete pad and sumps were removed and soil excavations were completed in March 2001. The Navy issued the final field sampling investigation report (an addendum to the closure summary report) dated April 12, 2001 (IT 2001b), and the third-party certification report for facility closure for IWTP 360 dated April 16, 2001 (Tetra Tech 2001c). The final field sampling investigation report includes soil sampling results, shows excavation boundaries, and reports results of the concrete chip samples collected from the concrete pad (IT 2001b). DTSC provided comments on the certification report by electronic mail, and the Navy prepared submitted responses that were further clarified with DTSC on June 20, 2001 and August 23, 2001. The comments and responses are documented in meeting minutes.

The Navy determined that closure of IWTP 360 was conducted in accordance with the 1995 closure plan and in conjunction with the subsequent field work plan and the field sampling investigation plan, with a few exceptions for analytical parameters as explained in the certification report and the responses to DTSC comments (Tetra Tech 2001c; Navy 2002). As explained further in the Navy responses to DTSC comments, the Navy will continue to address groundwater and soil contamination associated with Site 4 as part of the Navy's IR Program at Alameda Point (Navy 2002).

6.3 SITE 4 REMEDIAL INVESTIGATION RESULTS

This section presents the results of investigations conducted at Site 4 in support of the CERCLA risk management process. Evaluations conducted at Site 4 included (1) a site-specific conceptual site model (CSM), (2) a data quality assessment, (3) a background comparison, (4) a nature and extent evaluation, (5) a fate and transport evaluation, (6) an HHRA, and (7) an ERA. Sections 6.3.1 through 6.3.7 summarize the results of these evaluations. Appendices E, F, and G, respectively, present the complete background comparison, HHRA, and ERA.

6.3.1 Site-Specific Conceptual Site Model

The CSM for Site 4 was used to support the nature and extent evaluations and risk assessments by identifying potential sources of contamination, media affected, exposure pathways, and future receptors. Figure 6-10 presents the CSM for Site 4.

Through environmental investigations and literature searches, physical features or activities at Site 4 that might have generated hazardous waste or released chemicals to the environment were identified. The following Site 4 physical features and activities were identified as potential sources of contamination.

- Building 163A and NADEP GAP 59 (equipment maintenance) – freon, metals, corrosives, petroleum products, halogenated and nonhalogenated organics, and paint
- Building 170 (Partial) – corrosion preventative compounds, packaging foam, cutting oil, lubrication oil, thinner, adhesives, resins, varnish, and paints
- Building 360; TP-06 and TP-09; M-06; NADEP GAPs 01, 49A, 50 through 52, 55, 56, 57A, 58, and 80; and an old railroad track (located directly over the location of the highest concentrations of TCE) – painting, blasting, degreasing, solvent cleaning, plating of aircraft parts, acetone, aluminum oxides, ammonium chloride, chromic acid, aerosol paint, epoxy paint, paint thinner, lubrication and engine oils, JP-5, PD-680, blasting grit, and cyanide
- Buildings 360A through D (engine component storage) – unknown materials storage

- Building 372 and NADEP GAP 61 (turbo propeller test cell) – lubrication oil, aircraft oil, gear oil, PCBs, paint, nonhalogenated organics, metals, and solvents; known release of JP-5

- Building 414 (hazardous materials storage) – paints, solvents, cleaners, strippers, caustics, and abrasive blasting media

- ASTs 360 through E – diesel (ASTs 360A, B, and C) and Stoddard solvent and paint and paint seal wastes (ASTs 360D and E)

- AST 372 – fuel and fuel oil

- IWTP 360 (industrial waste treatment) – hexavalent chromium and cyanide wastewater, and hot and cold rinse tank water

- UST 163-1 – fuel oil

- USTs 372-1 and 372-2 – JP-5, and lubrication and waste oils, respectively; UST 372-2 leaked during removal

- OWS-163, OWS-360, OWS-372A and OWS-372B – solvents, metals, paints, and petroleum products

- Weed control – PCBs

- Placement of dredged fill material used to build the island – PAHs

Of these potential sources, Buildings 163A, 170, 360, 372, and 414; NADEP GAP 59; ASTs 360A, B, and C, and AST 372; UST 163 and UST 372-1; OWS-163, OWS-360, and OWS-372A; and routine weed control were identified as likely sources of soil and groundwater contamination at Site 4. Exposure pathways and primary and secondary release mechanisms may include the following:

- Direct release of solvents (containing TCE), or other hazardous wastes to soil from activities associated with Buildings 170, 360, 372, 163A, and 414, OWSs, leaking tanks, and spills

- Direct release of metals (cadmium, copper, silver) to soil from plating shop activities in Building 360, OWSs, and spills

- Direct release of paint (3,3'-dichlorobenzidine) to soil from paint stored at Building 170

- Direct release of petroleum hydrocarbons from Buildings 163A, 360, and 372, NADEP GAPs 59 and GAP 61, former USTs 372-1 and 372-2, and ASTs 360A, B, and C, and AST 372

- Direct release of PCB (Aroclor-1254) containing oils to soil
- Placement of fill material that contained PAHs
- Secondary release from soil to air through volatilization or resuspension of particulates
- Secondary release from soil to homegrown produce
- Secondary release from soil into the food chain from plant uptake
- Secondary release from soil to groundwater through infiltration (see Section 9.0)
- Direct release to groundwater (see Section 9.0)
- Secondary release from storm sewers to surface water (see Section 9.0)

As Figure 6-2 shows, storm sewer lines at Site 4 were categorized as (1) not below the groundwater table, (2) below the groundwater table with no cracks or significant groundwater infiltration observed, or (3) below the groundwater table with cracks and significant groundwater infiltration observed (Tetra Tech 2000b). Lines in the third category are considered to provide a possible preferential pathway for contaminants in groundwater (see Section 9.0)

As the CSM for Site 4 shows (see Figure 6-10), residential, commercial/industrial, and construction worker receptors were identified as potential human receptors, and exposure pathways include ingestion, inhalation, and dermal contact with soil and groundwater and inhalation of ambient and indoor air. Direct contact with soil and the food chain also were identified as complete terrestrial ecological exposure pathways. In addition, exposure of marine ecological receptors to contaminants through groundwater discharged to the Seaplane Lagoon was identified as a complete ecological exposure pathway and is discussed in Section 9.0.

6.3.2 Data Quality Assessment

As discussed in Section 6.2.1, investigations were conducted at Site 4 under CERCLA, the EBS, and the TPH Program to identify and assess the extent of contamination in soil and groundwater and to determine risk. Data were collected over a period of approximately 10 years using a biased and phased sampling approach. Sampling focused on the objectives below.

- Determine if soil and groundwater were contaminated in areas identified as potential waste release sites and under the plating shop in Building 360.
- Define the vertical and lateral extent of chlorinated solvents under and around the northern portion of Building 360.

- Characterize the lateral limits of the groundwater contamination plume.
- Evaluate fill material and native sediments to determine if PAHs are present in soil and sediment.

Detection limits for some of the data used to evaluate Site 4 exceeded the 2002 residential PRGs (EPA 2002). These elevated detection limits are from one or more of the following circumstances: (1) the evolution of lower detection limits as technology improves, (2) the revision of PRGs over time (which are not always technologically feasible), (3) and matrix interference. The first two of these circumstances generally do not result in significantly elevated detection limits. However, matrix interferences sometimes cause significant elevations in the detection limits for a chemical, which leads to uncertainty as to whether that undetected chemical could be present in significant concentrations at a site. Although some detection limits (sample quantitation limits) were elevated above 2002 PRGs, detection limits for nondetected chemicals were sufficiently low to permit identification of potential health risks.

Because detection limits for nondetected SVOCs in soil were elevated, further sampling and analysis of soil may be necessary to confirm these chemicals are not present in soil at Site 4. Although soil data gaps were identified, it was determined that the types and numbers of samples collected at Site 4 (see Figures 6-11 through 6-17) and the analyses conducted (see Tables 6-20 and 6-21) were sufficient to characterize at Site 4 and conduct risk assessments because data collection focused mainly on potential sources and was conducted in phases. The phased approach afforded stakeholders opportunities to provide feedback on the suitability or adequacy of the data to identify releases and complete the RI report. There is a low potential of any source at the site not being adequately evaluated or of recommending NFA if it poses a potential risk to human health or the environment.

Both definitive and screening-level data were generated. Screening data were considered appropriate for use in only nature and extent and fate and transport evaluations. See Section 3.4.2 for further detail regarding determining data quality and the use of definitive and screening-level data. In general, definitive quality data are consistent with EPA Analytical Level III, as specified in EPA's "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (EPA 1988a), and samples were analyzed in accordance with Contract Laboratory Program methods. Because laboratory detection limits for older PAH data were elevated and the 2003 PAH data were collected to replace older data, only PAH data from the 2003 sampling event were used in this RI.

Data generated during the environmental investigations that were considered to be of sufficient quality for use in the RI are presented in Appendix D. An OU-wide groundwater plume was identified for OU-2B, so groundwater data from Site 4 and the other OU-2B sites pertaining to the OU-wide groundwater plume are discussed in Section 9.0.

Tables 6-20 and 6-21 summarize the CERCLA, TPH, and EBS investigation results for soil and soil gas. The summaries are organized according to analytical group and include the following information: (1) the number and percent of detections of chemicals; (2) the average, minimum,

and maximum detected concentrations; (3) minimum and maximum detection limits for nondetected samples; and (4) whether the maximum detected concentrations or detection limits exceed Region 9 residential PRGs or California-modified PRGs (EPA 2002). PRGs and MCLs are provided in the tables for comparison purposes only.

6.3.2.1 Soil

At Site 4, soil samples collected under the environmental investigations were analyzed for VOCs, SVOCs, PAHs, pesticides, PCBs, metals, TPH, and general chemistry parameters (see Table 6-1). Of the samples collected and analyzed, results for 250 VOC and 195 SVOC samples were considered acceptable for use in this RI. Results for 35 samples analyzed for pesticides/PCBs and results for 224 samples analyzed for metals were considered acceptable. From the additional PAH sampling conducted in 2003, a total of 296 sample results were considered acceptable for use in the RI. Because of raised detection limits, PAH data for soil samples collected during previous investigations were not evaluated.

Laboratory detection limits for other chemicals in soil exceeded 2002 residential PRGs (EPA 2002) and are noted in Table 6-20. Detection limits for a few nondetected chemicals also exceeded residential PRGs (EPA 2002); however, most detection limits were below PRGs. Therefore, detection limits were sufficiently low to identify potential health risks except for the following SVOCs, for which more than 50 percent of the detection limits for exceeded 2002 PRGs in soil: bis(2-cholorethyl)ether, hexachlorobenzene, n-nitroso-di-n-propylamine.

A subset of the soil data were selected for use in the risk assessments, as shown in the following table. Data were considered to be appropriate for use if they (1) are validated and (2) reflect current site conditions. Data for soils that are no longer present at the sites because of removal actions were not included, because they do not reflect the current conditions at the sites. Risk from TPH was assessed separately (see Appendix H).

Soil data for each site were aggregated in depth intervals of 0 to 2, 0 to 4, and 0 to 8 feet bgs. The depth intervals were used to evaluate potential exposures associated with site use. The 0-to-2- and 0-to-8-foot bgs depth intervals evaluate potential human health exposures, and the 0-to-4-foot bgs depth interval evaluates potential ecological exposures. The total number of samples for each analytical group included in the data set for each depth interval is summarized in the table below.

Summary of Site 4 Soil Data for Risk Assessment

Analytical Group	0 to 2 Feet bgs	0 to 4 Feet bgs	0 to 8 Feet bgs
VOCs	30	100	152
SVOCs	67	124	166
PAHs	150	225	296
Pesticides/PCBs	10	22	34
Metals	73	133	188

Surface soil samples analyzed for pesticides were limited because pesticides were detected at low concentrations during the EBS sampling; therefore, they were not the focus of future CERCLA investigations at Site 4.

6.3.2.2 *Groundwater*

For this RI, groundwater is addressed OU-wide rather than by site; therefore, groundwater data from Site 4 and the other OU-2B sites are discussed in Section 9.0.

6.3.2.3 *Soil Gas*

Soil gas data were collected to evaluate risk from indoor air in the HHRA. At Site 4, 18 soil gas samples were collected at depths ranging from 0.5 to 5.5 feet bgs. Samples were collected near where maximum concentrations of VOCs in groundwater were detected (see Table 6-1). Detection limits for some of the nondetected chemicals exceeded ambient air PRGs (EPA 2002); however, sample quantitation limits were not set to meet these requirements.

6.3.3 Background

A background comparison was conducted for Site 4 by comparing a background data set with analytical results for metals in samples representative of the site. This comparison was used to determine which metals in soil are statistically similar to background and the concentrations could either be considered naturally occurring (background) or potentially resulting from historical site activities. The complete approach is presented in Appendix E and summarized in Section 3.5.2.

Based on a comparison of the data for soils at Site 4 with the background data set, the following metals in soil at Site 4 are not attributed to background.

- Barium
- Cadmium
- Calcium
- Chromium
- Copper
- Lead
- Manganese
- Nickel
- Silver
- Zinc

6.3.4 Nature and Extent

The main objectives of the nature and extent evaluation were to (1) present the types and concentrations of detected chemicals exceeding screening levels, (2) characterize the types and concentrations of chemicals that were used by the Navy, and (3) describe the spatial distribution

and concentration patterns of all chemicals that demonstrate significant risk to human health or the environment (referred to as "risk drivers"). Risk drivers are defined by the risk assessments, which were conducted prior to this nature and extent evaluation (see appendices F and G), as those chemicals that pose a carcinogenic risk above 1E-06, an HI above 1, or pose potential risk to ecological receptors. The results of the nature and extent evaluation for Site 4 soil are presented below.

6.3.4.1 Chemicals Exceeding Screening Levels

The purpose of this evaluation is to provide an initial screening of chemical concentrations detected in soil at Site 4; it is not to quantify risk, which is conducted in the risk assessments. Concentrations of chemicals detected in soil were compared to screening levels, which consisted of Region 9 residential or California-modified PRGs (EPA 2002), and 0.62 mg/kg for PAHs (expressed as B[a]P equivalents), which was established under agreements between the Navy and agencies (Navy 2001b).

Sampling locations for chemicals with concentrations exceeding screening levels in one or more sample are presented on Figures 6-18 through 6-21 and 6-30. Chemicals are grouped by analytical group, and sampling locations with concentrations exceeding these screening levels are designated. These figures were used to assess whether concentration patterns are present for each chemical detected above screening levels.

The table below identifies chemicals in soil that exceeded screening levels in one or more sample at Site 4. The table is organized according to analytical group and includes the maximum detected concentrations and the number of detected concentrations exceeding screening levels.

Chemicals in Site 4 Soil Exceeding Screening Levels

Chemical	Location of Maximum Detection	Maximum Detected Concentration	Screening Level	Number of Detected Concentrations Exceeding Screening Levels/ Total Analyzed
SVOCs (µg/kg)				
N-Nitroso-di-n-propylamine	B04-45	180	69	1/194
VOCs (µg/kg)				
Benzene	134-SS-004	5,800	600	4/243
Ethylbenzene	372-1E	17,000	8,900	1/243
Trichloroethene	143-SS-004	6,300	53	4/219
Vinyl chloride	143-IW-001	290	79	1/219
1,1,2,2-Tetrachloroethane	134-006-040	600	410	1/199
Metals (mg/kg)				
Antimony	B04-22	134	31	1/183
Arsenic	134-006-036	24.8	0.39	102/161

Chemicals in Site 4 Soil Exceeding Screening Levels				
Chemical	Location of Maximum Detection	Maximum Detected Concentration	Screening Level	Number of Detected Concentrations Exceeding Screening Levels/ Total Analyzed
Cadmium	B04-41	105	37	2/201
Chromium	B04-41	1,530	210	5/203
Iron	11/21-CH3	42,700	23,000	4/158
Lead	CA04-03	2,900	150	5/200
PCBs (µg/kg)				
Aroclor-1254	134-SS-001	1,300	220	1/35
PAHs (mg/kg)				
B(a)P equivalents	C3S004B023	4.021	0.62	12/294

No pesticides in Site 4 soil exceeded screening levels. The following conclusions were made for SVOCs, VOCs, metals, PCBs, and PAHs with concentrations exceeding screening levels in soil at Site 4.

Concentrations of the SVOC n-nitroso-di-n-propylamine were elevated above the screening level in a sample from one isolated sampling location on the northern edge of Building 360 (see Figure 6-18). Building 360 was used as an aircraft overhaul facility and stored chemicals and hazardous waste, which suggests that n-nitroso-di-n-propylamine may be associated with previous site activities.

Concentrations of the VOCs benzene, ethylbenzene, TCE, vinyl chloride, and 1,1,2,2-tetrachloroethane were elevated above the screening levels in soil at Site 4 and appear to be localized in several portions of the site (see Figure 6-19). Elevated concentrations of benzene and ethylbenzene were localized in the southwestern portion of Site 4, near former AST 372, former USTs 372-1 and 372-2, and OWS-372A. USTs 616-1 and 616-2 are approximately 60 feet south of the elevated benzene concentrations, and benzene was also detected near manhole 6H. Elevated concentrations of TCE were detected in three areas: the former plating shop within Building 360, catch basin 5J-3B, and near catch basin 5J-3E. A single elevated concentration of vinyl chloride was detected along the northwestern side of Building 360, near catch basin 5J-3F. An elevated concentration of 1,1,2,2-tetrachloroethane was detected along the southwestern side of Building 372. Benzene and ethylbenzene in soil are most likely related to the USTs, ASTs, and OWS. The presence of TCE and 1,1,2,2-tetrachloroethane in soil are most likely from releases of solvents used in Building 360.

Concentrations of the metals antimony, arsenic, cadmium, chromium, iron, and lead were elevated above screening levels in soil at Site 4 and most of the elevated concentrations were detected within the former plating shop in the western portion of Building 360 (see Figure 6-20). Antimony was elevated above the screening level in one sample collected near the southern portion of Building 360. Elevated concentrations of arsenic were detected in samples collected

near the former plating shop in Building 360, suggesting that arsenic at this location may be related to past site activities. All other elevated concentrations of arsenic appear to be uniformly distributed across Site 4 and are unrelated to storm sewers, buildings, or other site features, suggesting these detections may be naturally occurring. Elevated concentrations of cadmium and chromium were detected in two samples from locations near the northern and western portions of Building 360, and an elevated chromium concentration was detected in one sample collected from outside the western side of Building 360. Iron concentrations were elevated in four samples collected from the western portion of Site 4, and lead concentrations were elevated in five samples collected at various locations throughout Site 4. Metals were used at Site 4 in the plating of aircraft engine parts. Until 1975, waste streams from the plating shop typically were disposed of into the Seaplane Lagoon.

Elevated concentrations of the PCB Aroclor-1254 in Site 4 soil appear to be confined to a single area north of Building 360, next to catch basin 5J-3H (see Figure 6-21). Because Aroclor-1254 was detected in one sample only, there is no apparent distribution pattern. The elevated concentration of Aroclor-1260 may be attributed to historical use of PCBs for weed control

Concentrations of PAHs, expressed as B(a)P equivalents, are elevated above screening levels in soil at Site 4 and appear to be concentrated in the northwestern portion of Site 4 (see Figure 6-30). Elevated PAH concentrations were detected at shallow depths, which may be related to the use of asphalt, and at greater depths, which may be associated with the use of artificial fill material to construct the island. The presence of PAHs in soil does not appear to be related to the use patterns.

6.3.4.2 Characterizing Chemicals Used by the Navy

The purpose of this evaluation is to provide additional information to determine whether contamination hot spots or data gaps are present at Site 4. Chemicals believed to be used at Site 4 include pesticides, fertilizers, PCBs, and petroleum products. The concentrations of these chemicals and a general description of their extent are presented in the following text by media. Most of the chemicals detected across Site 4 are consistent with the historical activities that occurred at Building 360 and its accompanying facilities, including jet engine testing, equipment cleaning, and use of petroleum products. Statistical summaries of all soil and soil gas results are presented in Tables 6-20 and 6-21.

Even though TPH is not a CERCLA contaminant, soil and groundwater were sampled at various locations across Site 4 for TPH, which includes all TPH fractions (TPH as diesel, gasoline, jet fuel, or motor oil) and TPH-associated constituents (BTEX and lead). An evaluation of TPH in soil and groundwater at Site 4 was conducted based on the TPH strategy for Alameda Point to assess contamination and possible risk at the site (see Appendix H). Analytical results for soil and groundwater samples associated with Site 4 were screened against site-specific preliminary remediation criteria to evaluate the potential risk to human health and ecological receptors from TPH-related constituents using guidance for low-risk fuel site closure (California Regional Water Quality Control Board 1996). On the basis of this evaluation, NFA is recommended for Site 4 soil and further action is recommended for Site 4 groundwater for TPH-associated

constituents. TPH-impacted groundwater is addressed further in Section 9.0. TPH-impacted soil is discussed below, and TPH sampling locations for soil are presented on Figure 6-17.

Soil

The table below lists the detected chemicals believed to be used at Site 4, the range of concentrations detected in soil at the site, the detection frequency, and the sampling location of the maximum concentration detected. Figure 6-22 shows the locations of the samples with maximum concentrations.

Soil Analytical Results for Chemicals Believed to Have Been Used at Site 4

Chemical	Detection Frequency	Range of Detections	Sampling Location of Maximum Concentration	Sample Interval (feet bgs)
VOCs (µg/kg)				
1,1,1-Trichloroethane	12/219	2 to 170	MW360-2	8 - 9
1,1,2,2-Tetrachloroethane[1]	3/199	90 to 600	134-006-040	2 - 3
1,1-Dichloroethane	4/195	4 to 31	MW360-2	8.5 - 9
1,1-Dichloroethene	7/219	1 to 1,400	143-SS-005	7 - 7.5
1,2-Dichlorobenzene	2/193	2 to 4,000	143-IW-001	5 - 6
1,2-Dichloroethene (total)	10/189	1 to 7,400	143-IW-001	5 - 6
1,4-Dichlorobenzene	1/193	9 to 810	143-IW-001	5 - 6
Benzene[1]	11/237	1 to 5,800	134-SS-004	13.5 - 14
Chlorobenzene	3/200	2 to 6	B360-9	9 - 9.5
Ethylbenzene[1]	45/243	0.7 to 17,000	372-1E	4
M,P-Xylene	2/26	950 to 9,300	143-IW-001	5 - 6
O-Xylene	2/27	950 to 4,700	143-IW-001	5 - 6
Styrene	1/199	1	B360-5	9.5 - 10
Tetrachloroethene	1/216	2	D04-02	70 - 71
Toluene	54/247	0.8 to 26,000	030-S19-009	0 - 0.5
Trichloroethene[1]	18/219	1 to 6,300	143-SS-004	5 - 5.5
Vinyl Chloride[1]	1/219	290	143-IW-001	5 - 6
Xylene (total)	50/217	1 to 110,000	372-1E	4
Pesticides (µg/kg)				
4,4'-DDD	5/21	1.5 to 9.3	144-001-007	0.5 - 1
4,4'-DDE	5/21	1 to 15	144-001-008	0.5 - 1
4,4'-DDT	6/21	3.2 to 32	144-001-007	0.5 - 1
Alpha-BHC	1/21	1	030-S19-008	0 - 8
Alpha-chlordane	3/21	2.4 to 11	144-001-007	0.5 - 1
Beta-BHC	1/21	3.5	030-S19-008	0 - 8
Dieldrin	1/21	1.7	030-S19-008	0 - 8
Endrin Ketone	1/21	16	134-006-032	0.5 - 1.5
Gamma-chlordane	3/21	2.9 to 8.6	144-001-007	0.5 - 1
Heptachlor Epoxide	2/21	2.6 to 9.1	030-S19-004	0 - 7

Soil Analytical Results for Chemicals Believed to Have Been Used at Site 4				
Chemical	Detection Frequency	Range of Detections	Sampling Location of Maximum Concentration	Sample Interval (feet bgs)
Methoxychlor	2/22	6 to 83	144-001-008	0 - 8
PCBs (µg/kg)				
Aroclor 1254[1]	2/35	29 to 1,300	134-SS-001	3.5 - 4
Aroclor 1260	4/35	17 to 38	134-Z22-023	1 - 1.5
Metals (mg/kg)				
Cadmium[1]	174/203	0.06 to 105	B04-41	0 - 1
Chromium[1]	161/191	5.8 to 1,530	B04-41	0 - 1
Copper	41/191	4.3 to 326	B04-41	0 - 1
Silver	176/185	0.07 to 81.1	B04-41	0 - 1
Zinc	88/91	13,000 to 1,260,000	M03-07	2.5 to 3.5
Petroleum Hydrocarbons				
TPH-diesel	35/220	3 to 11,590	134-005-018	0 to 0.5
TPH-gasoline	26/220	0.1 to 7,100	134-005-018	0 to 0.5
TPH-motor oil	123/188	25 to 28,000	134-005-018	0 to 0.5

1 Exceeded screening levels in one or more samples. Other chemicals exceeded screening levels, but were not believed to be used at Site 4; these chemicals include N-Nitroso-di-n-propylamine, iron, lead, and PAHs.

A variety of chlorinated compounds were detected in the following three general areas around Building 360: (1) along the western edge between Buildings 360, 372, 163A, and 414, (2) near the northwest corner of Building 360, and (3) along the eastern edge of Building 360, near OWS-360 (Figure 6-12). The chlorinated compounds detected in soil include 1,1,1-TCA, 1,1,2,2-tetrachloroethane, 1,1-DCA, 1,1-DCE 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-DCE, chlorobenzene, styrene, tetrachloroethene (PCE), TCE, vinyl chloride. The presence of these chlorinated compounds is related to the usage of a variety of solvents at Building 360 and their dechlorination breakdown products. Only three of these compounds were detected in greater than 3 percent of soil samples that were analyzed, these include 1,1,1-TCA, 1,2-DCE (total), and TCE. TCE had the highest detection rate of the chlorinated compounds found in soil at Site 4 at 8 percent (18 of 219 soil samples analyzed). 1,1,1-TCA and TCE have been used as solvents in Building 360.

Concentrations of 1,2-dichlorobenzene, 1,2-DCE, chlorobenzene, PCE, and TCE were detected on the western edge of Building 360 near OWS 360. Most of the detections were from soil samples collected during the construction of monitoring well MW360-4. Concentrations were detected in samples to a depth of 15.5 feet bgs. Chlorobenzene was also detected in an adjacent soil boring at depths of 9 to 9.5 feet bgs. PCE was detected in this area in a soil sample collected from depths of 70 to 71 feet bgs during construction of monitoring well D04-02, although it has not been detected in other soil samples (210 total) collected at Site 4. 1,1,2,2-TCA was detected in surface soil samples collected from two locations (143-001-007 and 143-001-008) in the field area southwest of OWS 360 (see Figure 6-12).

Concentrations of 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-DCE, TCE, and vinyl chloride were detected at three soil sampling locations (D04-03, MW360-1, and 143-IW-001) to a maximum depth of 12 feet bgs near the northwest corner of Building 360 (see Figures 6-3 and 6-8). 1,4-Dichlorobenzene and vinyl chloride were not detected in any other soil samples collected at Site 4.

The majority of detections of chlorinated compounds in soil samples collected at Site 4 were at locations along the western edge of Building 360 and near Buildings 372, 163A, and 414. Compounds detected in these areas included 1,1,1-TCA, 1,1,2,2-tetrachloroethane, 1,1-DCA, 1,1-DCE, 1,2-DCE, chlorobenzene, styrene, and TCE. CERCLA investigation sampling locations included B04-24, B360-5, B04-43, B04-42, B360-6, and MW360-2 (see Figure 6-3). EBS investigation sampling locations included 143-SS-001, 134-IW-002, 134-006-032, 134-003-011, 134-006-034, 134-003-012, 134-006-040, and 143-SS-005 (see Figure 6-8). Many of these detections are located in the corridor between Building 360, 372, and 163A. Several chemicals, including 1,1,1-TCA, 1,1-DCA, 1,1-DCE, 1,2-DCE, and TCE, were detected in soil sample collected during the construction of well MW360-2 near the northeast corner of Building 372. The presence of these compounds in soil at these locations is related to the use of solvents in Building 360.

Several compounds related to landscaping and the use of pesticides, namely 4,4' DDD, 4,4-DDE, 4,4-DDT, alpha-BHC, alpha-chlordane, Aroclor 1254, Aroclor 1260, dieldrin, endrin ketone, gamma-chlordane, heptachlor epoxide, and methoxychlor, were detected in surface soil samples collected around Site 4. Sampling locations exhibiting detectable amounts of these compounds included 030-S19-004 and 030-S19-008 (see Figure 6-3), and 134-006-032, 134-IWPS2-001, 134-SS-001, 143-IW-001, 144-001-006, 144-001-007, 144-001-008, and 144-001-013 (see Figure 6-8). Most of these sampling locations are in the landscaped area east of Building 360. Aroclors do not appear to be related to known locations of transformers.

Chromium, cadmium, copper, and silver were detected at concentrations above background. The maximum concentrations of chromium (1,530 mg/kg), cadmium (105 mg/kg), copper (326 mg/kg), and silver (81.1 mg/kg) were observed at sampling location B04-41 at a depth of 0 to 1 foot bgs. In addition, chromium concentrations in several samples collected underneath the former plating shop in the west-central portion of the building between 0 and 1 feet bgs were above the maximum concentration observed in background soils (81.7 mg/kg). Chromium, cadmium, copper, and silver were both used at Site 4 as a component in the plating of aircraft engine parts since the building was built in 1953 until operations ceased in 1997. Waste streams from the plating shop typically were disposed of into Seaplane Lagoon until 1975 when they were diverted into the Building 360 IWTP (E&E 1983).

BTEX compounds were detected at 54 soil sampling locations located across Site 4. The majority of the detections were in samples collected within the vicinity of Building 372, an engine testing facility. The presence of these compounds in soil is related to the use of petroleum products at the site and is evaluated further in Appendix H.

Potential sources of TPH and TPH-associated constituents in soil included Building 163A and NADEP GAP 59 (equipment maintenance), Building 360 (aircraft overhaul facility), Building 372 and NADEP GAP 61 (turbo propeller test cell), and former USTs 372-1 and 372-2 (JP-5 and lubrication and waste oils, respectively). The maximum concentrations of total TPH in soil were detected in samples from location 134-005-018, north of Building 163A and within NADEP GAP 59, at a depth of 0 to 0.5 feet bgs (see Figure 6-17). Total TPH concentrations ranged from 28 to 46,690 mg/kg. The maximum concentrations of TPH as diesel (11,590 mg/kg), collected at a depth of 0 to 0.5 feet bgs at sampling location 134-005-018, and TPH-related benzene (5.8 mg/kg), collected at a depth of 4.0 feet bgs, were detected in samples from locations 134-005-018 and 372-1E, respectively, near former USTs 372-1 and 372-2. TPH was also detected in soil samples collected deeper than 4 feet bgs on the west side of Building 372, indicating a potential impact to groundwater.

6.3.4.3 Characterizing Risk Drivers

Following the evaluations of chemicals that exceeded screening levels and chemicals used by the Navy, a more detailed evaluation was conducted for those chemicals that pose potential significant risk (or risk drivers). Risk drivers were not limited to those chemicals used by the Navy; selection of risk drivers was defined by the HHRA and ERA (see Sections 3.4.6 and 3.4.7). Risk drivers are defined as those chemicals that pose a cancer risk above 1E-06, a hazard index (HI) above 1, or pose potential risk to ecological receptors. Background comparison results (see Section 3.4.3) were used to identify risk drivers attributed to background, and these drivers attributed to background were not evaluated further.

Based on the HHRA, 2,4-dinitrotoluene, n-nitroso-di-n-propylamine, 3,3'-dichlorobenzidine, Aroclor-1254, arsenic, B(a)P, cadmium, and TCE in soil were identified as risk drivers. Based on the ERA, cadmium, copper, silver, and PAHs in soil were identified as risk drivers. According to the background comparison, arsenic is attributed to background, so it is not evaluated further.

The discussions below focus on the nature and extent of Aroclor-1254, cadmium, copper, silver, n-nitroso-di-n-propylamine, 2,4-dinitrotoluene, 3,3'-dichlorobenzidine, PAHs, and TCE in soil at Site 4. The evaluation of these chemicals includes (1) site-specific figures to assess the spatial distribution and concentration patterns of the chemicals and (2) a review of the figures, data, and site hydrology to identify the boundaries of contamination, the volume of affected media, and, if possible, the suspected source(s) of these chemicals. Table 6-23 summarizes the nature and extent evaluation.

Aroclor-1254 in Soil

Figure 6-23 shows the concentrations of Aroclor-1254 in soil. The maximum detected concentration of Aroclor-1254 (1,300 µg/kg) was detected at a depth of 3.5 to 4.0 feet bgs in sampling location 134-SS-001, which is located approximately 50 feet north of Building 360, just south of catch basin 5J-3H. Aroclor-1254 was detected at a concentration of 29 µg/kg in one other sample collected at a depth of 5.0 to 6.0 feet bgs from sampling location 143-IW-001.

Sampling location 134-SS-001 was collected as part of the storm sewer investigation during the EBS. It is not considered to be representative of current conditions because storm sewers were cleaned and inspected by the Navy.

Although no spills of materials containing Aroclor-1254 are documented for Site 4, oils containing PCBs were used in some transformers and the used oil was occasionally used as an extender for pesticides around Alameda Point. Aroclor-1254 at Site 4 likely is related to the use of oils containing PCBs to control weeds and minimize dust, which were washed into the storm drain system.

Cadmium in Soil

Figure 6-24 shows the concentrations of cadmium in soil at Site 4. The maximum concentration of cadmium (105 mg/kg) was detected at a depth of 0 to 1 foot bgs at sampling location B04-41, which is underneath the northern portion of Building 360. In addition, cadmium exceeded the maximum background concentration in soil (0.82 mg/kg) in several samples collected at 0 to 1 foot bgs from underneath the former plating shop in the western portion of Building 360. Samples collected from 2 to 5.5 feet bgs at sampling location B04-41 in the vicinity of the former plating shop also contained elevated cadmium concentrations.

Cadmium in soil posing risk appears to be localized under and west of the former plating shop and in the northeast corner of Building 360. Cadmium was used at Site 4 in the plating of aircraft engine parts since the building was built in 1953 until operations ceased in 1997. Waste streams from the plating shop typically were disposed of into Seaplane Lagoon until 1975, when they were diverted to IWTP 360 (E&E 1983).

Copper in Soil

Figure 6-25 shows the concentrations of copper in soil at Site 4. The maximum concentration of copper (326 mg/kg) was detected in a surface soil sample from location B04-41, which is underneath the northern portion of Building 360. Copper concentrations in soil exceeded the maximum background concentration (49.1 mg/kg) in samples scattered across Site 4 from depths of 0 to 6.5 feet bgs. Elevated concentrations of copper were detected at depth (2.5 to 4 feet bgs) in soil beneath Building 163A (sampling locations 134-003-011, 134-003-012, and 134-006-043) and near storm and sanitary sewer lines (sampling locations 134-SS-002, M03-06, and B360-9). Copper was detected in soil at the greatest depth (13.5 to 14 feet bgs) in the northwestern portion of Site 4 in sampling location 134-SS-004, near a storm sewer line (manhole 6H). Copper exceeded the maximum background concentration in only one surface (0.5 to 1 feet bgs) soil sample that was not beneath a building (144-001-013). Copper was detected at a concentration of 92.6 mg/kg in sampling location 144-001-013, which is located in the eastern portion of Site 4.

Copper in soil at concentrations that may pose risk to ecological receptors appears to be localized under Buildings 360 and 163A, which are the likely sources, and at depth near sanitary,

industrial, and storm sewer lines. Copper was used at the site in the plating of aircraft engine parts at Building 360. Wastewater from the plating shop typically was discharged to storm sewers that emptied into the Seaplane Lagoon until 1975, when they were diverted to IWTP 360 (E&E 1983). Building 163A was used for plant services, aircraft overhaul, and maintenance, and as a garage. The concrete floor of the Building 163A is in poor condition, with considerable staining in the machine shop. Hazardous materials associated with the building included metals (ERM-West 1994).

Silver in Soil

Figure 6-26 shows the concentrations of silver in soil at Site 4. Concentrations of silver elevated above the maximum background concentration in soil (0.61 mg/kg) ranged from 0.07 to 81.1 mg/kg. The maximum concentration of silver (81.1 mg/kg) was detected in surface soil from sampling location B04-41, which is underneath the northern portion of Building 360. This sampling location also contained the maximum concentrations of cadmium and copper in soil. In addition, silver in several samples collected from under the former plating shop in the west-central portion of Building 360 at 0 and 1 foot bgs exceeded the maximum background concentration in soil and are collocated with elevated cadmium concentrations.

Silver in soil that may pose risk to ecological receptors appears to be localized under and west of the former plating shop in the western portion of Building 360, which is likely the source. Silver was used in the plating of aircraft engine parts (E&E 1983).

N-nitroso-di-n-propylamine in Soil

Figure 6-27 shows the concentrations of n-nitroso-di-n-propylamine in soil. Only soil samples from location B04-45 exhibited detected concentration of n-nitroso-di-n-propylamine. The maximum concentration of n-nitroso-di-n-propylamine (180 µg/kg) was detected at a depth of 0 to 1 foot bgs at sampling location B04-45, which is underneath the northern portion of Building 360. One other sample collected between 2.5 to 3.5 feet bgs contained n-nitroso-di-n-propylamine; however, the detected concentration was less than the risk-based screening level for soil (69 µg/kg). The detection limits for soil samples nondetected for n-nitroso-di-n-propylamine ranged from 35 to 8,000 µg/kg, and these limits exceeded the 2002 PRG 191 in samples (EPA 2002).

The source of n-nitroso-di-n-propylamine in soil at this location is unknown. There is no known commercial or industrial use of n-nitroso-di-n-propylamine and it is manufactured only as a research chemical (Agency for Toxic Substances and Disease Registry [ATSDR] 1989). This chemical has been found as a contaminant in some herbicides; however, the use of herbicides beneath Building 360 is unlikely.

2,4-Dinitrotoluene

The SVOC 2,4-dinitrotoluene was detected in 1 of 194 soil samples (see Table 6-20). As shown on Figure 6-28, 2,4-dinitrotoluene was detected at sampling location 030-S07-041 at a depth of 0 to 4.5 feet bgs at a concentration of 60 µg/kg, which is below the risk-based screening level of 120,000 µg/kg. This SVOC is considered a risk driver based on the homegrown produce pathway.

Sampling location 030-S07-041 is approximately 15 feet north of a former fuel line running east-west across Site 4 and was collected as part of the fuel line and UST investigation in 1998. It is not considered to be representative of current conditions because the fuel lines were either excavated or cleaned and left in place. The most commercially important use of 2,4-dinitrotoluene is as a chemical intermediate in the production of toluene diisocyanate, a precursor to polyurethane polymers (ATSDR 1998). Based on this and the frequency of detection of 2,4-dinitrotoluene at Site 4, it is unlikely that 2,4-dinitrotoluene is actually present at Site 4.

3,3'-Dichlorobenzidine in Soil

Figure 6-29 shows the concentration of 3,3'-dichlorobenzidine in soil. The maximum (and only) concentration (890 µg/kg) of 3,3'-dichlorobenzidine was detected at a depth of 0.0 to 8.0 feet bgs at sampling location 030-S19-008, which is in the eastern portion of Site 4, directly north of Building 164A. The maximum concentration of 3,3'-dichlorodibenzidine was less than the risk-based screening level of 1,100 µg/kg for soil. All remaining soil samples analyzed for 3,3-dichlorobenzidine were reported as nondetect. The detection limits for soil samples nondetected for 3,3-dichlorobenzidine ranged from 35 to 7,500 µg/kg, and 46 samples exceed the 2002 PRG (EPA 2002).

3,3-dichlorobenzidine is a component in paint dyes and its presence near Building 170, which temporarily stored paint, is not unexpected.

Polynuclear Aromatic Hydrocarbons in Soil

Figure 6-30 shows the concentrations of PAHs in soil expressed as B(a)P equivalents. PAHs at Site 4 are generally low. The following 11 sampling locations exhibited PAH concentrations exceeding the screening level of 0.62 mg/kg (Navy 2001): C3S004B001, C3S004B004, C3S004B008, C3S004B009, C3S004B010, C3S004B015, C3S004B023, C3S004B024, C3S004B031, C3S004B066, and C3S004B076. Sampling locations C3S004B001, C3S004B008, C3S004B009, C3S004B010, C3S004B015, C3S004B023, and C3S004B024 are northeast of Building 360. Sampling location C3S004B004 is northwest of Building 360. Sampling locations C3S004B031 and C3S004B066 are east of Building 360. Sampling location C3S004B076 is southwest of Building 360.

The maximum B(a)P equivalent of 4.021 mg/kg was detected at sampling location C3S004B023 at 4 to 8 feet bgs. Soil samples with B(a)P equivalent concentrations greater than 0.62 mg/kg were mainly located in the northeastern portion of the site and were collected from 4 to 8 feet bgs, except at sampling location C3S004B001, where PAH concentrations were above 0.62 mg/kg in surface soil. Sampling location C3S004B004 also exhibited a high PAH concentration in one sample collected from the ground surface. At sampling locations C3S004B031, C3S004B066, and C3S004B076, samples from 0.5 to 2, 2 to 4, and 4 to 8 feet bgs exhibited high PAH concentrations.

The elevated PAH concentrations in samples collected near the surface are most likely related to the presence of asphalt in roads at Alameda Point. The elevated PAH concentrations in samples collected from greater depths are most likely related to the use of fill material to build the base. Several industrial facilities, including a refinery, historically dumped wastes into the San Francisco Bay. This material was later dredged from the bay floor and used for fill material at Alameda Point. The presence of PAHs in soil does not appear to be related to the use patterns of Site 4 as a maintenance facility because the locations of the maximum B(a)P concentration are outside the main work area of Building 360 in an open area.

TCE in Soil

Figure 6-31 shows the concentrations of TCE in soil. TCE was detected in 18 of 219 soil samples, with the maximum concentration (6,300 µg/kg) detected at sampling location 143-SS-004 at a depth of 5 to 5.5 feet bgs. Sampling location 143-SS-004 is approximately 15 feet south of the industrial waste line connected to former IWTP-360. TCE was also detected in soil from sampling locations 143-SS-005 and B04-43 at concentrations above the risk-based screening level of 53 µg/kg. Sampling location B04-43 is beneath Building 360 (aircraft engine and airframe overhaul facility).

TCE is a common solvent and was used at Building 360. It is likely that activities and the release of TCE at Building 360 are the source of TCE in soil at Site 4.

6.3.5 Fate and Transport

The objective of this evaluation is to assess whether the risk drivers at Site 4 (1) have migrated or degraded, (2) are being released from a continuing source of contamination, and (3) are likely to be transported through groundwater or other potential pathways. The evaluation of these contaminants primarily included the following objectives.

- Identify soil sampling locations with the maximum concentrations of contaminants.
- Evaluate the effect of groundwater flow or other potential pathways on the distribution of contaminants.

The following sections present the fate and transport evaluation for each risk driver (Aroclor-1254, cadmium, copper, silver, n-nitroso-di-n-propylamine, 2,4-dinitrotoluene, 3,3'-dichlorobenzidine, PAHs, and TCE) to human and ecological receptors at Site 4. Because the site is currently paved, it is unlikely that sufficient soil would be exposed to transport chemicals in soil via wind. Therefore, this pathway is not evaluated.

6.3.5.1 Aroclor-1254 in Soil

The maximum detected concentration (1,300 µg/kg) of Aroclor-1254 in soil was detected at sampling location 134-SS-001 at a depth of 3.5 to 4.0 feet bgs. This sampling location is approximately 50 feet north of Building 360, just south of catch basin 5J-3H. Aroclor-1254 was detected in one other sample at a concentration of 29 µg/kg from 5.0 to 6.0 feet bgs at sampling location 143-IW-001.

Aroclor-1254 is a recalcitrant chemical and does not breakdown readily in soil. It readily binds to organic matter in soil and is relatively insoluble in water (ATSDR 2005). It is unlikely that Aroclor-1254 will migrate to groundwater at Site 4 because of its vertical distribution, low potential for migration, and strong tendency to bind to soil.

6.3.5.2 Cadmium in Soil

Cadmium was detected in samples collected from across Site 4, with elevated concentrations around the former plating shop in Building 360. The maximum concentration was detected in the northern portion of Building 360 at 0 to 1 foot bgs.

In soils, cadmium may precipitate as insoluble compounds (hydroxides and carbonates) or form complexes or chelates through interaction with organic matter (ATSDR 1999). These compounds are increasingly stable (lower solubility) under alkaline (pH greater than 7) soil conditions (Lindsay 1979). The soil pH at Site 4 ranges from 6.46 to 10.1; therefore, geochemical conditions at Site 4 will tend to stabilize cadmium in soil and make it unlikely that cadmium will migrate to groundwater.

6.3.5.3 Copper in Soil

Copper was detected in samples collected from across Site 4, with elevated concentrations around the former plating shop in Building 360 and Building 163A used for plant services, aircraft overhaul, and maintenance, and as a garage. The maximum concentration was detected in the northern portion of Building 360 at 0 to 1 foot bgs.

Copper is relatively immobile under most soil conditions because it attaches strongly to organic material and minerals (ATSDR 2002). Copper that dissolves in water typically becomes rapidly bound to particles suspended in the water. Because copper binds so strongly to suspended particles and sediments, it typically does not enter groundwater (ATSDR 2002).

6.3.5.4 Silver in Soil

Silver was detected in samples collected from across Site 4, with elevated concentrations around the former plating shop in Building 360. The maximum concentration was detected in the northern portion of Building 360 at 0 to 1 foot bgs and collocated with cadmium and copper.

Silver may be released into the air and water through natural processes such as the weathering of rocks, and rain may leach some of it from soil into the groundwater (ATSDR 1990). Because silver is an element, it does not break down but can change its form by combining with other substances. Silver found at hazardous waste sites forms a variety of compounds with other elements (silver nitrate, silver chloride, silver sulfide, and silver oxide) in soil and water. Over time, silver may change from the form first released to metallic silver, and then back to the same or other compounds (ATSDR 1990). The form it is found in depends on environmental conditions.

6.3.5.5 N-nitroso-di-n-propylamine in Soil

N-nitroso-di-n-propylamine was detected at two depths (0 to1 and 2.5 to 3.5 feet bgs) in samples from one location B04-45 beneath the northern portion of Building 360.

N-nitroso-di-n-propylamine is highly mobile and it has the potential to leach into shallow groundwater supplies. However, microbial degradation in the subsurface under both aerobic and anaerobic conditions is the dominant fate process, with half lives ranging from 14 to 80 days (ATSDR 1989). As a result, it is unlikely that concentrations of n-nitroso-di-n-propylamine detected in soil boring B04-45 are accurate.

6.3.5.6 2,4-Dinitrotoluene in Soil

The maximum concentration (60 µg/kg) of 2,4-dinitrotoluene was detected at sampling location 030-S07-041 at a depth of 0 to 4.5 feet bgs. Location 030-S07-041 is approximately 15 feet north of a former fuel line running east-west on Site 4.

The most commercially important use of 2,4-dinitrotoluene is as a chemical intermediate in the production of toluene diisocyanate, a precursor to polyurethane polymers (ATSDR 1998). It has been estimated that 99 percent of all 2,4-dinitrotoluene produced is used for this purpose (ATSDR 1998). Additionally, 2,4-dinitrotoluene is used in the production of TNT, and as a waterproofing, plasticizing, and gelatinizing agent in explosives (ATSDR 1998). 2,4-Dinitrotoluene is also used as an intermediate in the production of dyes and as a modifier for smokeless powders in the munitions industry (ATSDR 1998). Based on the uses and frequency of detection of 2,4-dinitrotoluene at Site 4, it is unlikely that 2,4-dinitrotoluene is actually present at Site 4.

It is expected to be stable in water because it is not hydrolyzed. The relatively low volatility and high solubility of 2,4-dinitrotoluene indicates that it will remain in water for long periods of

time, unless acted upon by light, oxygen, or biota. As a result, 2,4-dinitrotoluene has the potential to be transported to groundwater or surface waters (ATSDR 1998).

6.3.5.7 3,3'-Dichlorobenzidine in Soil

The maximum (and only) concentration (890 µg/kg) of 3,3-dichlorobenzidine was detected at sampling location 030-S19-008 at 0.0 to 8.0 feet bgs. Sampling location 030-S19-008 is in the eastern portion of Site 4, directly north of Building 164A.

3,3'-Dichlorobenzidine is sparingly soluble and has a strong tendency to be adsorbed onto soils and sediments (ATSDR 1998). It is unlikely that 3,3-dichlorobenzidine will migrate to groundwater at Site 4 because of strong tendency to bind to soil.

6.3.5.8 Polynuclear Aromatic Hydrocarbons in Soil

Low concentrations of PAHs were detected in soil across Site 4. The maximum PAH concentration expressed as B(a)P equivalent was in a sample collected from 4 to 8 feet bgs in an open area. Buildings and pavement at Site 4 have been present since the 1940s. Unless the PAHs are related to the concrete or asphalt that covers much of the site, the PAHs are probably attributable to material used to fill in San Francisco Bay and construct the land known as Alameda Point.

PAHs are mostly insoluble in water and strongly bind to organic matter in soil where they degrade very slowly, if at all. Most of Site 4 is paved, and the potential for leaching of PAHs from contaminated soil to groundwater currently is limited; therefore, the PAHs present in soil at Site 4 likely will remain in their present state. Although PAHs in soil are mostly insoluble in water and exhibit a low potential for migration, they can become mobile in the presence of petroleum hydrocarbons.

6.3.5.9 Trichloroethene in Soil

The maximum concentration (6,300 µg/kg) of TCE was detected at sampling location 143-SS-004 at a depth of 5 to 5.5 feet bgs. Location 143-SS-004 is approximately 15 feet south of the industrial waste line leading to former IWTP-360. TCE is a common solvent and was used at Building 360; therefore, these activities are the likely source of TCE in soil at Site 4.

TCE is moderately soluble in water, and most of the TCE present on soil surfaces will volatilize to the atmosphere or leach into the subsurface. Because TCE is a dense nonaqueous-phase liquid, it can move through the unsaturated zone into the saturated zone, where it can displace soil pore water (ATSDR 1997).

TCE is also the breakdown product of PCE, a chemical also used at Building 360.

6.3.6 Human Health Risk Assessment

A site-specific HHRA was conducted for Site 4 as part of the RI to estimate potential human health risks associated with potential exposures to site-related chemicals during current and potential future uses of the site. Section 3.4.6 summarizes the approach used to conduct the HHRA. A summary of the HHRA results for soil at the site is presented below, and a summary of the OU-wide groundwater plume HHRA results are presented in Section 9.0. The following sections discuss COPCs, the exposure assessment, and the risk characterization for the HHRA. Appendix F presents the complete HHRA.

6.3.6.1 Chemicals of Potential Concern

Data for soil and soil gas samples collected within and around the site boundaries of Site 4 were used to conduct the HHRA for soil. Only chemicals in soil considered to be essential nutrients were excluded as COPCs. The essential human nutrients that were excluded are calcium, magnesium, potassium, and sodium. All other chemicals were retained for evaluation in the HHRA. Lead was selected as a COPC and was evaluated using the LeadSpread model (DTSC 2003).

6.3.6.2 Exposure Assessment

According to reuse plans for Alameda Point, residential, and commercial/industrial uses most likely apply to future exposures at Site 4. These exposure scenarios, along with the construction worker exposure, were evaluated for the following soil pathways:

- **Residential** - incidental soil ingestion, dermal contact with soil, inhalation of particulates from soil (non-volatile), ingestion of homegrown produce, inhalation of vapors in ambient air, and inhalation of vapors in indoor air
- **Commercial/Industrial** - soil ingestion, dermal contact with soil, inhalation of particulates from soil (non-volatile), inhalation of vapors in ambient air, and inhalation of vapors in indoor air
- **Construction Worker** - soil ingestion, dermal contact with soil, inhalation of particulates from soil (non-volatile), and inhalation of vapors in ambient air

For all receptors, soil data were aggregated in depth intervals of 0 to 2 feet bgs (surface soil) and 0 to 8 feet bgs (subsurface soil). Exposure to subsurface soil was evaluated for future receptors in the event that subsurface soils are brought to the surface during redevelopment activities.

6.3.6.3 Risk Characterization

The potential for noncancer health effects is expressed as an HI. If the resulting HI is less than 1, it is assumed that there is no significant potential for noncarcinogenic health effects due to cumulative effects. If the total HI exceeds 1, a "segregation of hazard indices" analysis is conducted. In this analysis, chemicals that have similar target organs are grouped together, and

an HI is calculated for each group. If the HI for a target organ exceeds 1, there is potential for noncancer health effects.

It is important to note that the noncancer HI is estimated differently than lifetime carcinogenic risk; specifically, a child's exposure is not cumulatively additive to the projected adult exposure. Noncancer effects manifest over a specific time period, and once the exposure period is over, the hazard has also passed (that is, no latency is assumed). Therefore, because a child receptor has the highest potential risk, risk management decisions for chemicals with noncancer health effects are based on the HI for a child for the residential and recreational scenarios. The total HI that includes background chemicals is calculated for all scenarios, and an incremental HI (which does not include background) is also calculated for the child resident.

Unlike noncancer health effects, which assume that there is no significant potential for noncarcinogenic health effects if the HI is below 1, carcinogenic risks associated with exposure to chemicals classified as carcinogens are estimated as the incremental probability that an individual will develop cancer over a lifetime as a direct result of an exposure. Risk management decisions for chemicals with carcinogenic effects are based on lifetime or total risk; therefore, risks for adult and child receptors are summed to obtain a total carcinogenic risk. To aid in the interpretation of the results, EPA guidance presents a range of goals for residual carcinogenic risk, which is "an excess upper-bound lifetime cancer risk to an individual of between 1 in 1,000,000 to 1 in 10,000" or between 1.0E-06 and 1.0E-04. The range between 1E-06 and 1E-04 is referred to as the "risk management range."

The RME carcinogenic risks and noncancer HIs for soil at Site 4 are summarized below by scenario. See Section 9.0 for a summary of risk from the OU-wide groundwater plume. RME and CTE carcinogenic risks and noncancer HIs are presented in Table 6-23.

Soil

For the commercial/industrial and construction worker scenarios, the highest RME carcinogenic risk for surface soil is 4E-06 for the commercial/industrial worker, which is within the risk management range (see Table 6-23). The noncancer HIs for commercial/industrial and construction worker receptors are 0.2 and 0.5, respectively, which are below the threshold HI of 1. Commercial/industrial worker risk drivers for surface and subsurface soil are presented in Tables 6-24 and 6-25.

The residential scenario is considered the most conservative estimate of risk. For surface soil, the carcinogenic risk is 1E-04, which is within the risk management range. The noncancer HI for a child is 4, which is greater than the threshold HI of 1 for noncarcinogens (see Table 6-23). Carcinogenic and noncancer risk drivers for surface soil include the following (see Table 6-26):

- Arsenic
- B[a]P
- n-Nitroso-di-n-propylamine
- Cadmium

Soil risks are attributed primarily to arsenic and n-nitroso-di-n-propylamine. Arsenic at Site 4 is attributed to background. Concentrations of arsenic at Site 4 are similar to concentrations of arsenic in the background data set. N-nitroso-di-n-propylamine was detected in 1 of 67 surface soil samples at Site 4. The risk from n-nitroso-di-n-propylamine is attributed primarily to ingestion of homegrown produce, which is a highly uncertain exposure pathway.

For the commercial/industrial and construction worker scenarios, the highest RME carcinogenic risk for subsurface soil is 8E-06 for the commercial/industrial worker, which is within the risk management range (see Table 6-23). The noncancer HIs for commercial/industrial and construction worker receptors are 0.2 and 0.6, respectively, which are below the threshold HI of 1.

For subsurface soil, under the residential scenario, the carcinogenic risk is 2E-04, which exceeds the risk management range. The HI for a child is 4, which is above 1. Carcinogenic and noncancer risk drivers for subsurface soil include the following (see Table 6-27):

- Arsenic
- B[a]P
- Cadmium
- 2,4-dinitrotoluene
- 3,3'-dichlorobenzidine
- N-nitro-di-n-propylamine
- Trichloroethene
- Aroclor-1254

Soil risks are primarily attributed to arsenic, n-nitroso-di-n-propylamine, and 3,3'-dichlorobenzidine. Based on the background comparison, arsenic is attributed to background. N-nitroso-di-n-propylamine was detected in 2 of 165 subsurface soil samples at Site 4; 3,3'-dichlorobenzidine was detected in 1 of 165 samples. The risk from n-nitroso-di-n-propylamine and 3,3'-dichlorobenzidine is attributed primarily to ingestion of homegrown produce, which is a highly uncertain exposure pathway.

Lead in Soil and Groundwater

Lead was selected as a COPC for Site 4 soil and OU-wide groundwater and was evaluated using LeadSpread. Lead in site soil and OU-wide groundwater was not attributed to background. The EPCs for lead are 55.9 and 134 mg/kg for surface and subsurface soil, respectively. For water ingestion, two EPC s were used: 7.38 µg/L for the OU-wide groundwater plume, and 0.15 µg/L for EBMUD drinking water.

For surface soil, the LeadSpread model predicts that the 95th percentile estimate of blood lead is 3.7 µg/dL for a child ingesting Site 4 soil and OU-wide groundwater, and 2.7 µg/dL for a child ingesting Site 4 soil and EBMUD drinking water (see Appendix F). These values are below the comparison criterion of 10 µg/dL. Based on LeadSpread results, there is no appreciable risk to human health from ingestion of lead in Site 4 soil and groundwater. The 10 µg/dL child blood lead level equates to a soil concentration of 221 mg/kg when EBMUD is the drinking water source.

For subsurface soil, the LeadSpread model predicts that the 95th percentile estimate of blood lead is 5.8 µg/dL for a child ingesting Site 4 soil and OU-wide groundwater, and 4.8 µg/dL for a child ingesting Site 4 soil and EBMUD drinking water (see Appendix F). These values are below the comparison criterion of 10 µg/dL. Based on LeadSpread results, there is no appreciable risk to human health from ingestion of lead in Site 4 soil and groundwater. The 10 µg/dL child blood lead level equates to a soil concentration of 221 mg/kg when EBMUD is the drinking water source.

6.3.7 Ecological Risk Assessment

A site-specific ERA was conducted for Site 4 to estimate potential risks to ecological receptors. Section 3.4.7 summarizes the approach used to conduct the ERA. The following sections discuss chemicals of potential ecological concern (COPEC), the ERA problem formulation, and assessment results. Appendix G presents the complete ERA.

6.3.7.1 Chemicals of Potential Ecological Concern

Data for soil collected within and around the boundaries of Site 4 were used to conduct the ERA. Table 6-28 summarizes COPECs for soil from 0 to 4 feet bgs. Groundwater was evaluated for all OU-2B sites and is discussed separately in Section 9.0.

6.3.7.2 Problem Formulation

Currently, Site 4 does not contain ecological habitat capable of supporting significant wildlife; however, exposure pathways for terrestrial receptors were considered potentially complete to provide a conservative estimate of risk. The following complete soil exposure pathways were identified for Site 4:

- Direct exposure to soil
- Food chain exposure

Selected assessment and measurement endpoints include the following:

- Reproductive or physiological impacts to the California ground squirrel *(Citellus beecheyi)* as indicated by HQs developed based on both high (lowest observed adverse effect level [LOAEL]-based) and low (no observed adverse effect level [NOAEL]-based) toxicity reference values (TRV)
- Reproductive or physiological impacts to the Alameda song sparrow *(Melospiza melodia pusillula)* as indicated by hazard quotients (HQ) developed based on both high (LOAEL-based) and low (NOAEL-based) TRVs
- Reproductive or physiological impacts to the American robin (*Turdus migratorius*) as indicated by HQs developed based on both high (LOAEL-based) and low (NOAEL-based) TRVs
- Reproductive or physiological impacts to the red-tailed hawk *(Buteo jamaicensis)* as indicated by HQs developed based on both high (LOAEL-based) and low (NOAEL-based) TRVs

6.3.7.3 Ecological Risk Assessment Results

High and low TRVs were used to provide a bounding estimate of risk to each endpoint receptor. The high TRV represents an upper bounding limit, which is the lowest concentration at which adverse effects are known to occur. The low TRV represents the lower bounding limit, which is the highest concentration that an endpoint receptor can be exposed that does not result in adverse effects. If both HQ values for a chemical were below 1.0, then the ecological endpoint receptor is considered to be exposed to no potential risk from soil. Chemicals with one or both bounding limit HQs exceeding 1.0 were evaluated further based on background chemical concentrations, each chemical's frequency of detection and distribution at the site, the range of concentrations detected, and its absorption potential and toxicity to each ecological receptor. This type of analysis provides additional weight-of-evidence data to support risk management decisions for the sites. Assessment results for Site 4 soil for small mammal, passerine, and raptor populations are discussed below. Table 6-29 summarizes both high and low TRV HQ results for soil.

Small Mammal Populations

For small mammal populations, the California ground squirrel is the measurement endpoint receptor. The following soil COPECs had HQs above 1.0 (HQs in parentheses):

- Cadmium (2.4, 102)
- Manganese (2.2)
- Nickel (5.0)
- Zinc (1.7)
- Pentachlorophenol (3.1, 306)
- Copper (1.7)
- Molybdenum (2.1)
- Vanadium (2.5)
- Bis(2-ethylhexyl)phthalate (51.9, 5.2)

Literature data were not adequate to develop mammalian ecological reference values (ERV) for the metal silver, the SVOC n-nitroso-diphenylamine, and the VOC ethylbenzene. A qualitative evaluation was therefore conducted. All other COPECs evaluated at Site 4 were determined to pose no significant risk based on an HQ of less than 1.0 for both the low and high TRVs.

Cadmium, bis(2-ethylhexyl)phthalate, and pentachlorophenol had HQs above 1.0 for both the high and low TRVs. Cadmium was detected in 37 of 79 soil samples collected at Site 4 at concentrations ranging from 0.1 to 105 mg/kg. Background cadmium concentrations ranged from 0.1 to 0.82 mg/kg. Cadmium is a known teratogen in mammals; however, the gastrointestinal absorption of cadmium in mammals is limited (ATSDR 1999). Assuming a conservative absorption rate of 16 percent, revised high and low TRV HQ values for cadmium would be 0.379 and 16.3 mg/kg, respectively. Based on these factors, cadmium at Site 4 poses potential risk to small mammals.

Bis(2-ethylhexyl)phthalate was detected in 2 of 95 samples collected at concentrations of 0.69 and 7.6 mg/kg. Pentachlorophenol was detected in only 1 of 95 samples collected at a concentration of 0.13 mg/kg. These SVOCs are not known to bioconcentrate. The high HQs associated with these compounds are directly attributable to the conservative bioconcentration factor (BCF) values used in the risk calculations, which are based on the K_{ow} values of each chemical. Based on this information and the low frequencies of detection, these chemicals are expected to pose low risk to small mammals.

Only the low TRV HQs for copper, manganese, molybdenum, nickel, vanadium, and zinc exceeded 1.0. These COPECs were further evaluated using a weight-of-evidence approach as described above. After consideration of background concentrations at Alameda Point, the absorption potential of the constituent, the frequency of detection, BCFs used in risk calculations, habitat available at the site, and the concentrations at Site 4, manganese, molybdenum, nickel, vanadium, and zinc were determined to pose no significant potential risk to small mammals. The risk from copper could not be discounted.

The qualitative evaluation of risk to small mammals from exposure to silver, n-nitroso-diphenylamine, and ethylbenzene involved assessing weight-of-evidence parameters. Silver was detected in 30 of 71 samples collected from Site 4 at concentrations ranging from 0.8 to 81.1 mg/kg. Silver was also detected in 2 out of 88 background soil samples collected from Alameda Point at concentrations ranging from 0.44 to 0.61 mg/kg. Very little information is available concerning the effects of silver on mammalian species. Potential impacts to small mammals from exposure to silver cannot be discounted.

The chemical n-nitroso-diphenylamine was detected in 3 of 95 samples at concentrations ranging from 0.073 to 0.32 mg/kg. Ethylbenzene was detected in 21 of 61 samples at concentrations ranging from 0.001 to 0.028 mg/kg. VOCs will have toxic effects only at higher concentrations (500 to 1,000 mg/kg) (ATSDR 1992b, 1996a, 1996b). The impact to small mammals from the residual levels of SVOCs and VOCs cannot be discounted but is expected to be low because of low toxicity associated with the low concentrations and the low frequency of detections.

Passerine Populations

For passerine populations, the Alameda song sparrow and American robin are the measurement endpoint receptors. The following soil COPECs had HQs above 1.0 (HQs in parentheses):

- Cadmium (1.8)
- Bis(2-ethylhexyl)phthalate (sparrow, 197, 1970; robin 15.5, 155)
- Lead (2, sparrow; 66, robin)

Literature data were not adequate to develop avian ERVs for the metal silver; high molecular weight (HMW) PAHs, low molecular weight (LMW) PAHs, n-nitroso-diphenylamine, and pentachlorophenol; and the VOCs 1,1,1-trichloroethane (TCA), ethylbenzene, toluene, and xylene. A qualitative evaluation was therefore conducted. All other COPECs evaluated at Site 4 were determined to pose no significant risk based on HQ values of less than 1.0 for both the low and high TRVs.

Bis(2-ethylhexyl)phthalate HQs exceeded 1.0 for both the high and low TRV values. As discussed above for small mammals, the high HQ values are directly attributable to the conservative BCF values used in the risk calculations. The risk from this SVOC to passerines is therefore expected to be low.

Only the low TRV HQs for cadmium and lead were above 1.0. After consideration of background concentrations at Alameda Point, the absorption potential of the chemical, the frequency of detection, BCFs used in risk calculations, habitat available at the site, and the concentrations at Site 4, cadmium and lead were determined to pose no significant potential risk to passerines.

The qualitative evaluation of risk to passerines from exposure to silver, HMW PAHs, LMW PAHs, n-nitroso-diphenylamine, pentachlorophenol, 1,1,1-TCA, ethylbenzene, toluene, and xylene involved assessing weight-of-evidence parameters. As discussed above for small mammals, the potential risk to passerines from silver at Site 4 cannot be discounted.

HMW and LMW PAHs were detected at Site 4 at frequencies ranging from 36 to 90 percent for the 225 samples collected at Site 4. The EPCs calculated for the chemicals ranged from 0.014 to 0.201 mg/kg. PAHs can cause genotoxic, reproductive, and mutagenic effects; however, studies indicate that PAHs do not appear to bioaccumulate in mammals and birds (Eisler 1987). Based on the relatively high frequency of detection, the risk posed to passerines from residual levels of HMW and LMW PAHs cannot be discounted.

N-nitroso-diphenylamine was detected in 3 of 95 samples at concentrations ranging from 0.073 to 0.32 mg/kg. Pentachlorophenol was detected in only 1 of 95 samples at a concentration of 0.13 mg/kg. Risk to passerines from such residual levels of SVOCs at Site 4 is expected to be low because of the low frequency of detection.

The chemicals 1,1,1-TCA, ethylbenzene, toluene, and xylene were detected in 8 to 49 percent of 62 samples collected at Site 4. Concentrations ranged from 0.001 to 0.19 mg/kg. In general, VOCs have toxic effects only at higher concentrations (500 to 1,000 mg/kg) (ATSDR 1992b, 1996a, and 1996b). The risk to passerines from residual levels of VOCs at Site 4 cannot be discounted but is expected to be low.

Raptor Populations

For raptor populations, the red-tailed hawk is the measurement endpoint receptor. The following soil COPECs had HQs above 1.0.

- Cadmium
- Bis(2-ethylhexyl)phthalate
- Lead

Literature data were not adequate to develop avian ERVs for the metal silver; the SVOCs HMW PAHs, LMW PAHs, n-nitroso-diphenylamine, and pentachlorophenol; and the VOCs 1,1,1-TCA, ethylbenzene, toluene, and xylene. A qualitative evaluation was therefore conducted. All other COPECs evaluated at Site 4 were determined to pose no significant risk, based on HQ values of less than 1.0 for both the low and high TRVs.

Cadmium and bis(2-ethylhexyl)phthalate HQs exceeded 1.0 for both the high and low TRVs. As discussed above for small mammals, only 4 samples exceeded the maximum background concentration for cadmium and represent hotspots. Cadmium may pose a potential risk to raptors. As discussed above for small mammals and passerines, the high HQ values for bis(2-ethylhexyl)phthalate are directly attributable to the conservative BCF values used in the risk calculations. Risk from this SVOC to raptors is expected to be low.

Only the low TRV HQ for lead for the red-tailed hawk was above 1.0; however, this HQ may be driven by an overly conservative low TRV value that was based on a study by Edens and others (1976). When the HQ was calculated using an alternative TRV value developed by Oak Ridge National Laboratory for the U.S. Department of Energy, the HQ for the red-tailed hawk was 0.44. Based on this information, lead at Site 4 poses no potential risk to raptors.

The qualitative evaluation of risk to raptors from exposure to silver, HMW PAHs, LMW PAHs, n-nitroso-diphenylamine, pentachlorophenol, 1,1,1-TCA, ethylbenzene, toluene, and xylene involved assessing weight-of-evidence parameters. As discussed above for passerines, there is very little information available concerning the effects of silver on avian species. The potential risk posed to raptors from silver at Site 4 cannot be discounted but is expected to be low. Impacts to raptors from HMW PAHs and LMW PAHs could not be discounted because of the lack of information concerning long-term impacts of multiple PAHs at the site. Based on the low frequency of detection and low concentrations detected, risk posed to raptors from exposure to n-nitroso-diphenylamine and pentachlorophenol is expected to be low. The risk to raptors from 1,1,1-TCA, ethylbenzene, toluene, and xylene at Site 4 could not be discounted but was expected to be low based on the low concentrations of these chemicals at Site 4.

6.4 SITE 4 CONCLUSIONS AND RECOMMENDATIONS

This section summarizes conclusions and recommendations on the nature and extent of chemicals in soil at Site 4 and the risk posed by those chemicals. The contents of this section are based on (1) the site-specific CSM, (2) a background comparisons, (3) the nature and extent evaluations, (4) the fate and transport evaluations, (5) the HHRA, and (6) the ERA.

6.4.1 Nature and Extent Conclusions

The nature and extent evaluation concluded that most of the chemicals detected in soil across Site 4 are consistent with historical activities that occurred at Building 360, including painting, blasting, degreasing, solvent cleaning, and plating of aircraft parts, and activities at Building 372 including petroleum-related compounds, and landscaping activities in the field area east of Building 360. A variety of chlorinated compounds were detected in the following three general areas around Building 360: (1) along the western edge between Buildings 360, 372, 163A, and 414; (2) near the northwest corner of Building 360; and (3) along the eastern edge of Building 360, near OWS-360. The chlorinated compounds detected in soil included 1,1,1-TCA, 1,1,2,2-tetrachloroethane, 1,1-DCA, 1,1-DCE 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-DCE, chlorobenzene, styrene, PCE, TCE, vinyl chloride. The presence of these compounds in soil is related to the use of solvents. Several compounds related to landscaping and the use of pesticides, namely 4,4'-DDD, 4,4-DDE, 4,4-DDT, alpha-BHC, alpha-chlordane, Aroclor-1254, Aroclor-1260, dieldrin, endrin ketone, gamma-chlordane, heptachlor epoxide, and methoxychlor, were also detected in surface soil. In addition, elevated concentrations of chromium were detected underneath the former plating shop in the western central portion of the building between 0 and 1 feet bgs. Chromium was used at Site 4 as a component in the plating of aircraft engine parts.

BTEX compounds were detected across Site 4 at 54 soil sampling locations. The majority of the detections were in samples collected in the vicinity of Building 372, and engine testing facility. The presence of these compounds in soil is related to the use of petroleum products at the site.

Arsenic concentrations were elevated at isolated locations from 5 to 6 feet bgs. These isolated arsenic detections only slightly exceed the maximum background concentration of arsenic. Arsenic cannot be attributed to any known sources at Site 4. No other soil samples analyzed exhibited arsenic at concentrations exceeding the maximum ambient soil concentration of 23 mg/kg.

The maximum concentrations of cadmium, copper, and silver were detected underneath the northern portion of Building 360 at 0 to 1 foot bgs. Cadmium and silver concentrations exceeding the ambient level appear to be localized in surface soil under and west of the former plating shop in the eastern portion of Building 360. Copper was detected in soil samples collected from across the site, with elevated concentrations in surface soil underneath the former plating shop in Building 360 and Building 163A and at depth near sanitary, industrial, and storm sewer lines. Buildings 360 and 163A are the likely source of these metals in soil.

6.4.2 Risk Assessment Conclusions

This section discusses HHRA and ERA results from the evaluation of risk from chemicals detected in soil and the lead groundwater plume at Site 4. Risk assessment results for the OU-wide groundwater plume are presented in Section 9.0.

Although numerous chemicals were detected at Site 4, some of these chemicals do not pose significant risk as defined by the risk assessments. Based on the HHRA, 2,4-dinitrotoluene, n-nitroso-di-n-propylamine, 3,3'-dichlorobenzidine, Aroclor-1254, arsenic, B(a)P, cadmium, and TCE were identified as risk drivers in soil. Based on the ERA, cadmium, copper, silver, and PAHs were identified as risk drivers in soil. According to the background comparison, arsenic is attributed to background.

6.4.2.1 Human Health Risk Assessment Conclusions

According to reuse plans for Alameda Point, residential and commercial/industrial exposures are the most likely future exposures at Site 4. Human health risk was evaluated for residential and commercial/industrial exposures, along with construction worker exposure. HHRA results for soil are summarized below.

Soil

For the commercial/industrial and construction worker scenarios, the most conservative RME carcinogenic risks for Site 4 soil are within the risk management range, and the most conservative RME noncancer HI for soil is below 1.

The residential scenario is considered the most conservative estimate of risk. For surface soil, RME carcinogenic risks are within the risk management range. For subsurface soil, RME carcinogenic risks exceed the risk management range. The surface and subsurface soil noncancer HIs for a child are 4, which exceed the threshold HI of 1.

Soil risks are primarily attributed to arsenic, n-nitroso-di-n-propylamine, and 3,3'-dichlorobenzidine. Based on the background comparison, arsenic is attributed to background. N-nitroso-di-n-propylamine was detected in 2 of 165 subsurface soil samples at Site 4; 3,3'-dichlorobenzidine was detected in 1 of 165 samples. The risk from n-nitroso-di-n-propylamine and 3,3'-dichlorobenzidine is attributed primarily to ingestion of homegrown produce, which is a highly uncertain exposure pathway. Excluding the ingestion of homegrown produce pathway, the RME carcinogenic risk is within the risk management range.

Lead in Soil and Groundwater

Lead was selected as a COPC for Site 4 soil and OU-wide groundwater and was evaluated using LeadSpread. Lead in soil and groundwater was not attributed to background. For both surface and subsurface soils, child blood lead levels are below the comparison criterion of 10 µg/dL.

Based on LeadSpread results, there is no appreciable risk to human health from ingestion of lead in Site 4 soil and groundwater.

6.4.2.2 *Ecological Risk Assessment Conclusions*

A site-specific ERA was conducted for Site 4 to estimate potential risks to the environment. Currently, Site 4 does not contain ecological habitat capable of supporting significant wildlife; however, exposure pathways for terrestrial receptors were considered potentially complete to provide a conservative estimate of risk.

Assessment endpoint receptors include small mammals, passerines, and raptors. Cadmium, copper, and silver in soil were identified as posing potential risk to small mammals. Silver and PAHs in soil were identified as posing potential risk to passerines and raptors.

6.4.3 Recommendations

Based on the data and risks discussed above, soil at Site 4 is recommended for further evaluation in an FS, as defined under CERCLA, to address risks to residential receptors under the unrestricted reuse scenario. N-nitroso-di-n-propylamine, 3,3'-dichlorobenzidine, Aroclor-1254, cadmium, TCE, and PAHs are identified as chemicals of concern (COC) for soil.

Arsenic and 2,4-dinitrotoluene were also identified as risk drivers for soil but are not recommended as COCs for further evaluation in the FS. Arsenic is attributed to background. It is unlikely that 2,4-dinitrotoluene is actually present at Site 4, based on one detection in soil related to a fuel line and UST investigation that is not considered to be representative of current conditions and the concentration is below the 2002 PRG. This SVOC is considered a risk driver based on the homegrown produce pathway.

Although chemicals were identified that could pose a risk to ecological receptors, there is little likelihood Site 4 will be used for ecological habitat. Therefore, the risks identified for ecological receptors are overestimated. No action is recommended for chemicals based on potential risk to ecological receptors.

An evaluation of TPH in soil and groundwater also was conducted based on the TPH strategy for Alameda Point. On the basis of this evaluation, NFA is recommended for soil and further action is recommended for groundwater for TPH-associated constituents at Site 4. TPH-impacted groundwater is addressed further in the OU-wide groundwater section (see Section 9.0).

The following data gaps were also identified.

- Further investigation of OWS-360 is recommended.
- Because detection limits for nondetected SVOCs in soil were elevated, further sampling and analysis of soil may be necessary to confirm these chemicals are not present in soil at Site 4.